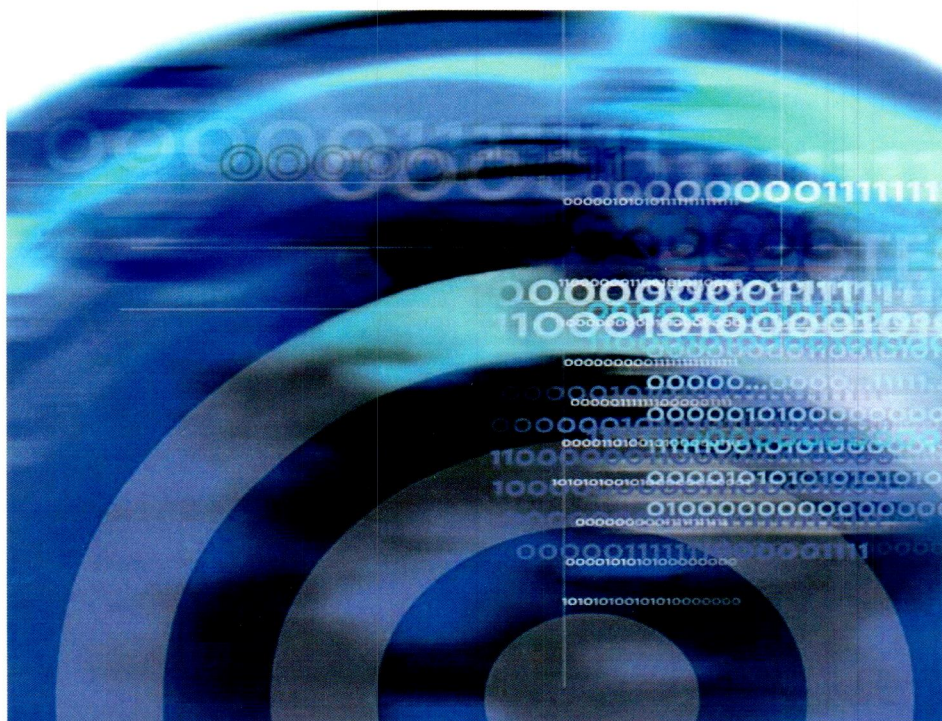


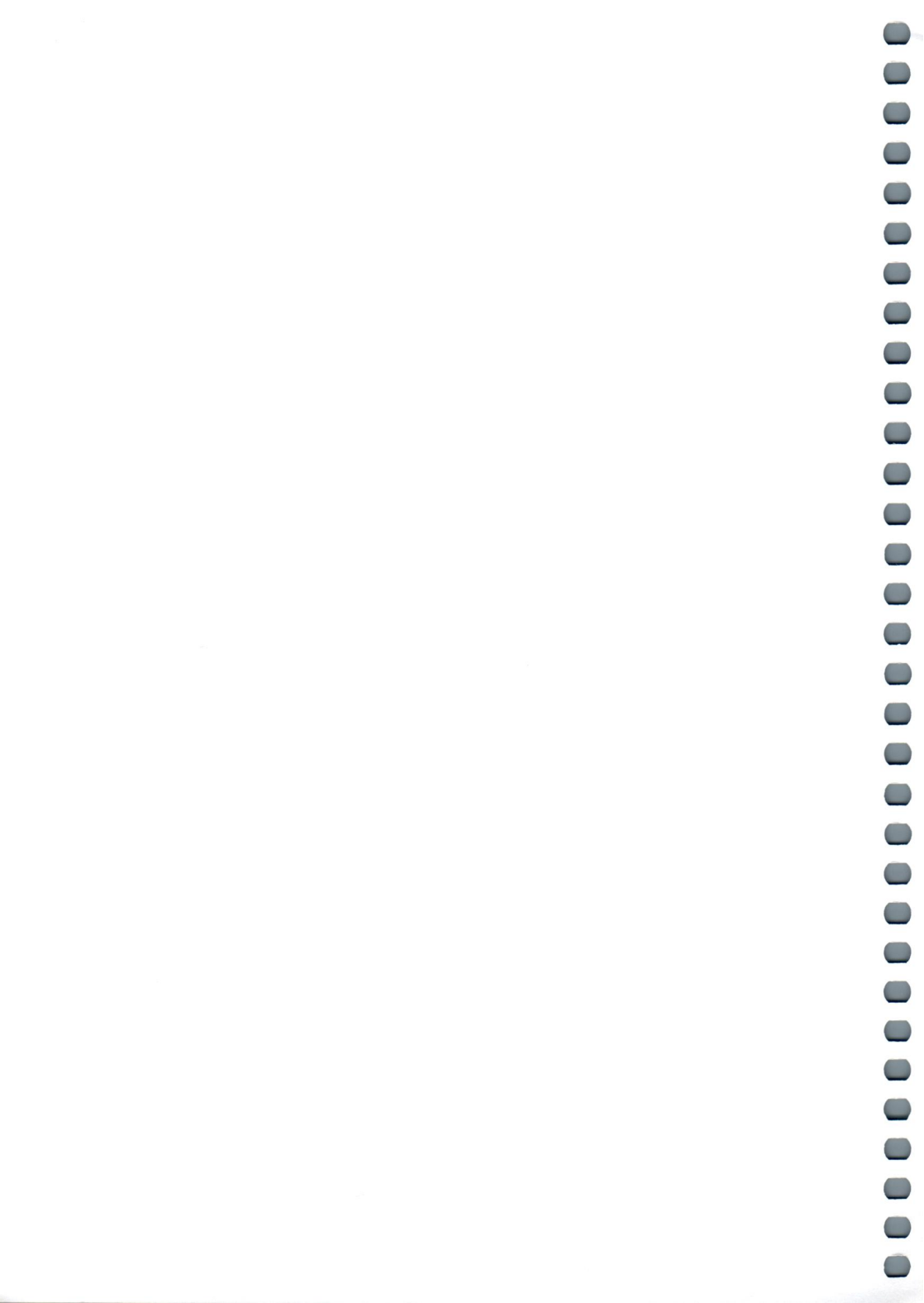


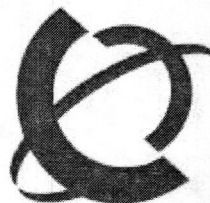
Nortel Communication Server 1000

Release 4.5 Product Bulletin

Document Release: Standard 1.00







Product Bulletin: P-2005-0267-Global
6 September 2005
Issue 1.1

Communication Server 1000 Release 4.5 Product Bulletin

Nortel is pleased to announce the General Availability of Nortel Communication Server 1000 Release 4.5.

Nortel Communication Server 1000 Release 4.5 software represents Nortel's ongoing commitment to the evolution of the traditional TDM enterprise network to a converged IP based network. This commitment encompasses support and added value to our traditional enterprise customers, while demonstrating a new and exciting vision of the converged network. Release 4.5 builds on the strength of Communication Server 1000 Release 4.0 by introducing extended platform support and capability, coupled with important serviceability, capacity, connectivity, and IP telephony feature enhancements.

This bulletin provides as an overview of the enhancements made to the Communication Server 1000 portfolio including platforms, tools, engineering rules and ordering information. Complete information can be found in the various NTPs and Price Guides. Late breaking technical advisements can also be found in this bulletin. Users will be able to download up-issues to this Product Bulletin off of the Partner Information Center as they become available. Customers looking for Defense Switch Network (DSN) specific information should consult Product Bulletin P-2005-0282-NA.

Table of Contents

COMMUNICATION SERVER 1000 RELEASE 4.5 PRODUCT BULLETIN.....	1
RELEASE 4.5 FEATURE SUMMARY	6
COMMUNICATION SERVER 1000 RELEASE 4.5 HARDWARE FEATURES	6
COMMUNICATION SERVER 1000 RELEASE 4.5 SOFTWARE FEATURES.....	6
COMMUNICATION SERVER 1000 RELEASE 4.5 SYSTEM MANAGEMENT FEATURES	13
COMMUNICATION SERVER 1000 RELEASE 4.5 SET FEATURES.....	16
SURVIVABLE REMOTE GATEWAY 50 (SRG 50).....	17
SOFTWARE & HARDWARE GUIDELINES	19
FEATURE / PLATFORM AVAILABILITY MATRIX.....	19
NEW & ENHANCED SOFTWARE PACKAGES AND APPLICABLE SYSTEMS.....	21
NEW LICENSE AND APPLICABLE SYSTEMS	21
SYSTEM COMPATIBILITY MATRIX	22
COMMUNICATION SERVER 1000 RELEASE 4.5 SOFTWARE LISTING	29
COMMUNICATION SERVER 1000 RELEASE 4.5 PSDL LISTING.....	30
SOFTWARE LIFECYCLE MANAGEMENT	33
MIXED SOFTWARE: MAIN AND BRANCH OFFICE	34
SOFTWARE CONVERSION	35
HARDWARE MD & EOL	35
SOFTWARE DOWNLOADS	36
ENGINEERING CONSIDERATIONS.....	39
CAPACITY.....	39
MEMORY REQUIREMENTS	42
RECOMMENDED CRITICAL SPARES	45
ORDERING.....	46
GLOBAL SOFTWARE STRUCTURE	46
THE GLOBAL PRODUCT AND PRICING CATALOGUE (GPPC).....	50
NNEC	51
ORDERPRO	53
DOCUMENTATION.....	55
TRAINING	59
THE AMERICAS.....	59
ASIA PACIFIC.....	64
EMEA	66
NEW ORDER CODES FOR COMMUNICATION SERVER 1000 RELEASE 4.5	69
SOFTWARE UPGRADES TO CS 1000 RELEASE 4.5	69
CS 1000 RELEASE 4.5 NEW PROCESSOR UPGRADE CODES	70
CS 1000 RELEASE 4.5 NEW SYSTEM UPGRADE CODES	70
SOFTWARE LICENSE CONVERSIONS.....	70

CS1000 RELEASE 4.5 NEW HARDWARE CODES	71
ADVISEMENTS.....	73
PEPs	73
OTM PEPs	77
TECHNICAL ADVISEMENTS	78
CR ADVISEMENTS	85
APPENDIX A – CHARGEABLE SERVICE LEVEL LICENSES – ALL SYSTEMS.....	86
APPENDIX B – CHARGEABLE SYSTEM LEVEL LICENSES – ALL SYSTEMS	88
APPENDIX C – CHARGEABLE SERVICE/SYSTEM LEVEL LICENSES – MEDIA GATEWAY 1000B (PREVIOUSLY SUCCESSION BRANCH OFFICE).....	90
APPENDIX D – MANAGED PACKAGES	92
APPENDIX E - GLOBAL MINIMUM LICENSE ORDER INCREMENTS FOR NEW SYSTEMS	93
APPENDIX F - X11/X21 RETIRED SOFTWARE FEATURE PACKAGES	96
APPENDIX G – SERVICE LEVEL CONTENT.....	98
APPENDIX H MEDIA GATEWAY 1000B SOFTWARE CONTENT	106
APPENDIX I- COMMUNICATION SERVER 1000 RELEASE 4.5 CVSD STRUCTURE.....	112
APPENDIX J - GNU LESSER GENERAL PUBLIC LICENSE	129

Introduction

Nortel is delivering on its promise of a Meridian 1 PBX to IP PBX evolution. This strengthens our customers' confidence and encourages their continued investment in their Nortel solutions. The converged networks of today provide a rich feature set to both established and green-field customers. Customers can be confident in their investment knowing that the reliability offered by a Communication Server 1000 pure IP deployment or a migration from TDM to IP ensures that their investment is maximized and the needs of the end users are fulfilled.

With the introduction of a new CP processor, the CP PIV, customers can continue to grow their networks ensuring an increase in system capacity as their businesses evolve in term of both user capacity and new services offered.

The following sections of this bulletin describe in detail the platform, features and functionality introduced with Release 4.5.

Release 4.5 Feature Summary

Communication Server 1000 Release 4.5 Hardware Features

Control Processor Pentium® IV (CP PIV)

The large PBX systems are migrating from the current Pentium® II based processor to a Pentium® IV based processor. The system types affected are:

- Nortel Communication Server 1000M SG
- Nortel Communication Server 1000M MG (only Fiber Network Fabric – FNF – systems are supported with the CP PIV)
- Nortel Communication Server 1000E
- Nortel Meridian 1 PBX 61C
- Nortel Meridian 1 PBX 81C (FNF only)

The new processor will be a commercial grade processor, based on Intel's Pentium-M® Low Voltage CPU with the following attributes:

- 1.1GHz clock frequency – several times faster than the current CPPII, 266 MHz clock frequency
- 10/100/1000 MHz Ethernet Port
- 512MB RAM
- Built in, on-board 1GB compact flash, replacing the hard drive (FMD)
- Faceplate accessible Compact Flash slot for loading system software, backups, etc. (RMD)

The addition of the on-board and faceplate accessible Compact Flash eliminates the requirement for moving media devices (hard drive, CD & floppy). In conjunction with the new processor a new version of VxWorks® real time operating software is also being introduced and will be applicable to both versions of the Pentium® based Control Processor (CP PII, CP PIV).

This processor is a direct plug in replacement for the CP PII processor; however, with the on-board compact flash unit, it removes the requirement for the Multi-Media Disk Unit/disk carrier that was required with the Pentium II-based processor. The MMDU or the disk carrier must be removed with the new CP PIV processor board. A blank faceplate is available on upgrades for the MMDU/disk carrier slot. As there is no floppy drive, a blank compact flash will be provided in the compact flash software media kit for database captures.

Communication Server 1000 Release 4.5 Software Features

Alternative Call Routing for Network Bandwidth Management

Alternative Call Routing for Network Bandwidth Management allows a station-to-station call (i.e. one that is not using a trunk) between a Branch office and Main Office to overflow to traditional routing mechanisms when there is insufficient inter-zone bandwidth available to carry the call. This also applies

to station-to-station calls from one Branch office to another Branch office providing that both stations are registered to the same Main office. There are multiple choices of routes provided (e.g. TIE and PSTN) for the overflowed calls. Some customers have only a limited amount of bandwidth available, and wish for additional calls to be possible using conventional trunks, either PSTN or TIE/MCDN. This feature allows such customers to trade off the capital cost of WAN bandwidth against the incremental cost of overflowed calls.

When the Bandwidth Management feature determines that a station-to-station call cannot be made because there is insufficient bandwidth, this alternative routing for Network Bandwidth Management feature will permit the standard NARS routing features to be invoked. The feature essentially will make a trunk call out of a call which did not originally envisage using a trunk. The customer will have the ability to provide routing codes accessing a variety of alternate routes. The alternate routes that can be selected can be any that are supported by the NARS feature.

The term “branch” is used to refer to both the Media Gateway 1000B and Survivable Remote Gateway (Both SRG 50 and SRG 1.0). This feature applies to both types of gateways.

Adaptive Network Bandwidth Management

The Adaptive Network Bandwidth Management feature provides a new way to enhance the performance of VoIP networks based on real-time interaction. It makes available the means to automatically adjust bandwidth limits and take corrective action in response to QoS feedback. This dynamic bandwidth adjustment maintains a high level of voice quality on the network in the face of network degradation.

The ADBM (Adaptive Network Bandwidth Management) feature dynamically adapts to the QoS found in the network and reduces the bandwidth available for Interzone calls if the QoS degrades. Typically, each Call Server in the network has a zone assigned to it. The Call Server keeps track of the bandwidth being used between its own zone and zones belonging to other Call Servers. If the QoS degrades between the Call Server’s zone and a particular zone belonging to another Call Server, the available bandwidth is reduced automatically between those two zones. When the QoS between the two zones improves, then the bandwidth limit is returned to normal.

When an IP set encounters degradation of the network, it informs the Call Server through various QoS alarms. These QoS alarms; Packet loss, jitter, delay, and for phase 2 IP sets, R value, are reported to the Call Server. Depending upon the rate of the incoming alarms and the value of the alarms, the Call Server reduces the available bandwidth available to make new calls. It will lower/limit the amount of new calls allowed based on the available bandwidth. This has the effect of preventing excessive calls being placed on a network with limited bandwidth (which has the consequence of poor voice quality). Once the adjusted (lowered) bandwidth has reached its full capacity, new calls will either be routed to an alternate route (if available) either via NARS or the Alternative Routing feature, or new calls will be blocked. The algorithm continues to monitor the network throughout the network degradation and upon removal of the degradation or improved performance of the network, the allowable bandwidth returns to provisioned levels and the Call Server would start gradually allowing new calls

Essentially, this means that with “Adaptive Network Bandwidth Management”, there is fallback to PSTN on QoS degradation for new calls. The system can manage bandwidth and measure quality between all the Zones across the entire network, and then take the necessary corrective action. Due to the real-time interaction with the network, this translates into less maintenance required of the network since the system will react automatically to network conditions.

This feature is unique in that it is not necessary to provision bandwidth parameters between every zone in the network. Rather, the Call Server automatically learns of new zones in the network and applies the Adaptive Network Bandwidth algorithm to these new zones as required. Therefore, as new Call Servers are added to the network, it is not necessary to re-provision all the other Call Servers on the network to take into account this new Call Server. Conversely, when Call Servers are removed from the network, the remaining Call Servers age out the old Call Server information and therefore, provide only up to date bandwidth information.

This feature will operate between all IP Peer CS 1000 systems, including the Media Gateway 1000B, and Survivable Remote Gateways.

Active Call Failover

Communication Server Release 4.5 provides enhancements to Release 4.0 offering by allowing active VoIP calls to Nortel IP Phones to remain active if the signaling is lost to the active signaling server. This feature is only available on the IP Phone 200x Phase 2 terminals. When the IP Phone detects a loss of connectivity, it must re-register with the secondary signaling server while maintaining the media path of active call in progress. The IP phone displays the localized “Server Unreachable” text during the failover period.

For Media Gateway 1000B customers, upon failure of the WAN or Main office Signaling Server (including IP-IP & IP-PSTN calls), the branch IP phones that are active on a call would also remain active and re-register to the branch Signaling server without re-setting or dropping the active call after the watchdog timer has expired.

Restrictions:

- Most call scenarios are kept alive with this feature, however, there are certain specific call scenarios where failover is not supported, such as calls in the dialing state when the failover occurs
- Secondary Signaling Servers must have available resources to re-register IP sets

Advanced Unistim Firmware Download

To introduce new IP Phones to a customer with a CS 1000 system in the past required a new release of the communication server to support the new Phone types. This was necessary to ensure that once the phones were deployed we have the ability to download firmware to allow delivery of product enhancements.

CS 1000 Release 4.5 now includes the ability to support new IP Phones without the requirement for an up-issue to the Communication Server. With this feature there is an Element Management interface that will allow the system administrator to view the IP Phones currently supported and at a glance determine if the latest version of IP Phone firmware is loaded on the system. The Element Management interface will allow the administrator to easily initiate an update of firmware. As new IP Phones become available the "Firmware Currency" file for the Communication Server will be updated. This will allow the Element Management interface to display information on the new phones and allow the Communication Server to support the phones by downloading firmware and printing information on Phone types that are registered.

This feature will:

- Simplify the introduction of new IP Phones into the CS 1000 portfolio
- Simplify the management of IP Phones and IP Phone firmware
- Provide a new and easier method to update IP Phone firmware files

LNAME option removed

The LNAME option has been removed. As of Release 4.5, all passwords must include the login name. With software releases previous to R4.5, the administrator, logged in with the PWD2 password, could optionally associate a login name with PWD1, PWD2, and LAPW accounts, using the LNAME_OPTION. In R4.0 the LNAME_OPTION default was changed to Y, however it could be changed to N in LD17.

When the value of LNAME_OPTION was N, users needed only a password to be authenticated to the system. When the value of LNAME_OPTION was Y, the authentication was more secure because users must provide a valid login name and password instead of just a password.

Default Queue Management

The Default Queue Management (DQM) feature is a Symposium specific feature. This feature allows a Contact Center administrator control over moving agents of similar skillsets to the same ACD Queue such that during the default behaviour of the CS 1000, agents of similar skillsets receive relevant calls. This requirement stems from the ability of a Meridian MAX supervisor to move agents from one ACD Queue to another using the Load Management Link and was previously unavailable in Symposium.

Consider the scenario whereby an agent moves to different desks in the course of a day. For example, a French agent assigned to the French_Sales skillset. This skillset corresponds to ACD Queue 4500 or the French Sales Queue in the CS 1000. In the morning, the agent sits at a telset assigned to ACD Queue 4600. The system administrator has to move that telset to ACD Queue 4500 in case of default scenarios. In the afternoon the agent moves to another desk and the telset is in ACD Queue 4700 - the system administrator again has to move that telset into ACD Queue 4500. With the DQM feature the Call Center administrator can now move an agent to the desired ACD Queue on login from any telset without

manual system intervention. Once an agent is configured correctly then no further operation is generally necessary since the ACD default profile will follow the agent.

New DSP Peg Counter Traffic Report

This feature aims at providing a count for the number of times calls were blocked on an MG 1000E (formerly called an IPMG) due to a lack of DSP resources and also the time and date of such events. If the DSP resource allocation failed due to a lack of bandwidth, this also will be reflected. This feature includes the above count as a part of traffic measurement in Overlay 2.

The allocation of DSP resources during the following scenarios will be provided:

1. TDM to TDM call across MG 1000Es.
2. TDM to IP set call.
3. TDM set making an outgoing virtual trunk call.

ACD agent Capacity Increase

On large systems, the ACD Agent capacity will increase from 2200 in release 4.0 to 3350 in release 4.5 with the increased processing capacity of the new CP PIV processor. See the section above for further details on the improvements from the CP PIV processor.

CLID Redirecting Number Enhancements

Calling Line Identity (CLID) Redirecting Number Enhancements feature provides the flexibility to select the desired redirecting number for calls that undergo multiple redirections. These enhancements enable users to select the desired CLID from the incoming call redirection information. Providing the appropriate CLID display on the terminating sets and selecting the appropriate Voice Mail box if applicable are the main benefits of these enhancements. The following sections describe the two key aspects of the enhancements.

Incoming diverted call with multiple internal and/or external diversions

One new configurable option Allow last Re-Redirecting Number "ARDN" on the Route Data Block in Overlay 16 will be provided to select the appropriate option according to the following scenarios:

- When the ARDN prompt is set to NO (default), the Original Called Number (OCN) is selected to be displayed and the associated Voicemail box will be utilized if applicable.
- When the ARDN prompt is set to YES, the last redirecting number will be selected to be displayed and the associated Voicemail box will be utilized if applicable.
- When the ARDN prompt set to RPO (Redirecting number for Public OCN), the Original called number is first checked if it is a private or public number (whether the call is first forwarded from private or public network).

- If the OCN is private, OCN is selected.
- Otherwise the last redirecting number is selected.

Incoming calls to CDN acquired by SCCS

For calls routed by Symposium Call Center Server (SCCS), when both the ACD Agent and the SCCS controlled CDN has a voice mail box configured, the mail box routing decision is decided based on the new prompt “CMB” in the ACD Overlay 23. If the CMB prompt is set to YES, the call would be connected to the CDN’s mailbox. If it is set to NO (default), the call would be connected to the Agent’s mailbox.

Campus Redundancy Enhancement

Campus Redundancy, which was introduced in release 4.0, enhances the resilience of the CS 1000E system through the physical separation of the system’s dual Call Servers over a carefully engineered Layer 2 VLAN infrastructure (Campus Redundancy is not supported in CS 1000M Large Systems). Details on engineering the Layer 2 network can be found in the System Redundancy NTP: 553-3001-307. This provides additional system reliability, allowing the remote standby Call Server to assume system control in case of failure of the active Call Server.

Note: If the two Call Servers are collocated, they can also be connected using a standard Category 5 crossover cable, which is limited to 100 meters in length.

To separate the redundant Call Servers, the ELAN subnet and the subnet of the High Speed Pipe (HSP) must be extended between the two processors using Layer 2 switches.

With this enhancement, enough temporary data is copied to the redundant processor so that the redundant processor can recover with only a warm start and active calls are not dropped.

Release 4.0 introduced this functionality with only BayStack 470-24T switches supporting Campus Redundancy. With Release 4.5, Nortel will support most layer 2 switches for Campus Redundancy. Information will be provided in Nortel customer documentation on the latest supported products.

IP Call Recording Phase 2

CS 1000 Release 4.5 introduces an enhancement to IP Call Recording that provides a direct and cost effective method of capturing and recording VoIP calls. The feature enhancement implements a mechanism to record the IP media stream to an external media-recording device by instructing the IP Phone to send a duplicate media stream to a third-party call-recording application. The third-party call-recording application provides the recording and playing function for the IP calls.

This feature enhancement is supported on the Phase II IP Phone 2001, IP Phone 2002, IP Phone 2004 and will be supported on the IP Softphone 2050 and the IP Phone 2007 with their next firmware update.

This feature requires as a minimum:

- Communication Server 1000 Release 4.5 Software
- IP Phone Firmware D98
- Symposium 5.0 Service Update 5
- Product Enhancement Patch (PEP) SUS0504_IPR
- Third Party Call Recording Application and Server.

The Call Recording vendor must participate in the Nortel Partner Program and be a MLS licensee.

The following clients are not supported at this stage: 2050MVC (Mobile Voice Client), IP Audio Conference Phone 2033 and WLAN handsets (2210/2211). This feature is not applicable to Analogue or Digital (TDM) telephone sets.

This feature enhancement introduces a new class of service (CLS) prompt:
IP Call Recording Allowed/Denied (ICRA/D).

Note: This Class of Service is not supported in OTM release 2.2. and overlay 10 must be used directly to add this CLS to the IP Phone.

If the CLS prompt is set to Denied (default), the IP Phone will not respond to a duplicate media stream request and an error message will be sent to the Call Recording device.

Call Recording is initiated by the Call Recording (CR) application sending a Start Recording Request message via MLS to the Call Server. This MLS message specifies the IP Phone address (by DN, TN or ACD agent Position ID) to be recorded and the IP address and port information where the duplicate stream should be sent. The Call Recorder application can request the IP Phone to insert a warning tone into the transmit path of the IP media stream. This will signify to the distant party that the call is being recorded.

If the request is for an invalid device (e.g. analogue or digital set, DN not equipped or excluded IP sets), an error message is returned. If the call recording is allowed the Call Server will send on a per call basis a Start Duplicate Media Stream Request message to IP Phone. The IP Phone creates an exact duplicate of the primary media stream (e.g. if the primary media stream is G.711, the duplicate media stream will also be G.711). The IP Phone sends separate Transmit and Receive duplicate media stream to the requested destination. At the end of the call the Call Server will send a Stop Duplicate Media Stream Request message.

When the IP Phone receives a start or Stop Duplicate Media Stream message it replies with an acknowledge message that it has undertaken the action. This message is then forwarded by the Call Server via MLS to the Call Recorder Application.

When the Call Recorder application wants to stop recording, it sends a Stop Recording Request message via MLS to the Call Server with the appropriate IP Phone information (DN, TN or ACD agent position ID). If a call is in progress, the call server will instruct the IP set to stop sending the duplicate stream.

Communication Server 1000 Release 4.5 System Management Features

Password Complexity (Strong Passwords)

Password Complexity Enforcement is an option that can be applied to a new password entered for the ADMIN user, the LAPW - OVL user, or the PDT user. Before a password is accepted by the system, it is evaluated to ensure that the password meets the following guidelines:

1. contains a combination of at least eight alphanumeric characters
2. includes at least one alphabetic, one numeric
3. does not contain the userid or portion thereof, in forward or reverse form
4. is not a combination of the year or date
5. does not contain any 3 or more letters in forward or reverse alphabetic sequence, ASCII sequence, or QWERTY keyboard sequence
6. does not match the system default password

If any of the checks fail, then password complexity check fails and the system will not accept the new password. The system will generate a SEC007 message that indicates to the user why the password was not accepted, and provides the acceptable guidelines for password complexity.

The benefit of Password Complexity Enforcement is that it reduces the potential security impact of a stolen password file and eliminates the simple, easy-to-guess passwords. In addition, this feature changes the algorithm used to encrypt system passwords to improve security. With this feature, passwords are hashed along with the username and a salt (random number)(random number) using the Secure Hash Algorithm (SHA-1) function. The result is a 160-bit value stored in the "password" file. Passwords offered as login credential are then processed the same way and the results are compared before the password is accepted.

EM Navigation and Usability Enhancements

A significant portion of the Element Manager User Interface is now "exposed" directly in the navigator. This greatly simplifies the task of finding a particular page, and aids in process of discovering / learning to use the product.

The new enhanced Element Manager Navigator also allows users to move directly between functional areas that are related to the same workflow (*for example when performing configuration of a feature and then executing maintenance commands for the same feature*).

These enhancements contribute to reduce the number of pages loaded and the number of steps / clicks required by more than 33%, consequently increasing the efficiency of performing these tasks.

Overall usability is also enhanced through the use of more explicit terminology, logical groupings, and less heavy font and graphic treatment. Also a number of style sheet-based updates are designed to increase the visual similarity of the Element Manager and the Network Routing Service Manager. These

updates are largely intended to establish an overall style in preparation for more extensive standardization.

Affected areas include:

- Introduction of a context sensitive on-line help available when using the Element Manager Virtual Terminal and accessing any of the Call Server loads.
- The Element Manager login screen, which is revised to parallel that of the Network Routing Services Manager login.
- The Element Manager navigator itself (list of links presented in a tree-like structure on the left side of all pages – see illustration at left), which is revised significantly, including terminology, grouping and depth, order of items, and overall content. Page titles and breadcrumbs are also updated to reflect new terms and groupings established in the navigator.
- The Element Manager page banner, which now includes basic user interface functions (for example logout) and system information.
- The Element Manager “home” page which is streamlined to present summary information in a brief single-page view without the additional navigation points that in release 4.0 are hidden under collapsible sections in a scrolling window.
- Certain configuration pages, which require access to maintenance functions in separate areas of the Element Manager User interface, now include appropriate hyperlinks.
- Visual consistency and readability changes (improved naming, navigator changes, alignments, position of keys, font's size, etc) are applied in the NRS Manager.
- Detection of pop-up blockers when using internet-explorer and display of currently logged-in users is also introduced in the NRS Manager interface.
- The NRS Manager's searching capabilities are enhanced to support the ability to view overall configured gateway / user endpoints regardless of the endpoint configuration path. It now also provides a routing entry / default route DN type filtering option.

EM Security Enhancements - Encryption

Connections between the user's web Browser and the Element Manager / NRS Manager web servers can now be established using SSL / TLS encryption protocols.

- SSL for secure remote access can eliminate the need for VPNs, which saves equipment and management complexity and provides for more flexibility of access. (*client software being embedded in browser instead of VPN client*).

- Web management interfaces are kept free from network “spy” programs securing management data and configuration ability.

A new Element Manager Certificate Management Wizard guides users through the certificate management and the TLS configuration process.

EM Security Enhancements – Strong Password Policy enforcement

It is now possible using the Element Manager interface to change systems passwords, including situations when a user try to login with a “stale” password and is required to change it.

Also, Element Manager now fully supports complex-password rules. Passwords enforcement rules can be defined using Element Manager. These rules will also be applicable to the situations when a user wishes to change a password through the Element Manager interface.

EM Support for other core features introduced in this release

The Element Manager supports the parameters introduced by the core features on this release, when applicable to Element Manager coverage. In many circumstances, new pages are introduced grouping together the configuration parameters specific to the feature and providing easy access to the maintenance commands associated. This is the case for the:

- Alternate Routing for Branch users feature.
- Adaptive Network Bandwidth Management and CAC feature.

Changes are also introduced enhancing the process of managing and downloading firmware files to the IP Telephone sets making this more intuitive and user-friendly. The Element Manager displays a comparative view of the newly available firmware from the Nortel download website. It clearly identifies the firmware already uploaded in the Signaling Server and presents a view of the current distribution status in all the network elements. See the section on “Advanced Unistim Firmware Download” for further details on this feature.

SNMP Management Enhancements

The enhancements to the SNMP capabilities introduced in the CS 1000 4.5 software release include support for the Host Resources MIB (RFC 2790), the inclusion of a number of RTCP XR statistics in the R-factor threshold violation messages (Messages QOS0028 & QOS0036), and additional information which are provided in the NTPs to indicate which system messages are sent as SNMP traps.

Communication Server 1000 Release 4.5 Set Features

Attenuator Bit for Wireless Handsets

The Communication Server (through the TPS) will indicate to the WLAN Handset when to use a loud ring or soft ring based on the information it has about whether there is an active speech path to the handset or not (i.e. call active, not held calls). The CS directs the handset to use the alerter or the speaker by either not setting or setting the attenuated bit. This is implemented in this fashion to prevent the user from having to explicitly disconnect the phone at the end of the call.

Call Duration Timer Support on IP Phone 2001 and 2002 sets

This feature implements the Display Call Timer on a) IP Phone 2002 Phase I and Phase 2 sets, b) IP Phone 2001 Phase 2 sets and prioritises over Calling Party Number Display (CPND). The functionality will be identical to the implementation in M3902. CPND is displayed unless Call Timer is enabled on the Core as well as the set. This issue is documented under CR Q00982151.

802.1x/EAP Support

The D9x firmware up-issue will support IEEE 802.1x and IETF EAP functionality. The phones will implement the supplicant (client-side) of the protocol using MD5 authentication. The authenticator (server-side) part of the protocol is already supported in Nortel's Baystack switches and most other competitive equipment. The authentication server part of the protocol is already supported by the leading industry RADIUS servers.

The phase II phones include an integrated 3 port Etherswitch to which a PC or other 802 LAN device can be attached. One might assume that the integrated switch will perform the role of Authenticator to attaching devices. However, the integrated switch will be transparent and pass authentication request onto the network edge L2/L3 switch and therefore will NOT be an Authenticator. This decision is valid in that Nortel's Baystack switches and most other competitive equipment, does, or will, be capable of authenticating multiple hosts connected on a single port.

Support for VLAN Filtering on the Telephony port

With D9x firmware, a new configuration menu must be available to allow the user to enable or disable the filtering of telephony packets based on a VLAN ID. The filtering enabled/disabled menu will only be presented if tagging is enabled on the telephony port.

Consistent with existing operation, if tagging is enabled on the telephony port, the default value for filtering must be disabled. As such, packets destined for the phone port will be filtered only on their MAC address. Filtering based on their VLAN tag will not occur. This unfortunately makes the telephony port susceptible to broadcast storms and vulnerable to Denial of Service (DOS) attack.

If tagging is enabled on the telephony port, the user will be allowed to also enable VLAN filtering on the telephony port. If enabled, packets destined for the phone port will be filtered both on their MAC address and their VLAN tag. Untagged packets and packets with a VLAN tag different from the Telephony VLAN ID must be prevented from reaching the phone port.

Support for Ignoring Gratuitous ARP (GARP)

This feature protects the phone from a “Gratuitous ARP Spoof” type of attack from the network. A malicious device on the network may commandeer an IP address (usually the default gateway’s IP address) by sending unsolicited (or Gratuitous) ARP messages which results in the manipulation of the ARP table on the victim’s machine. This manipulation then allows the malicious device to launch a number of various attacks on the network which in turn results in undesired traffic routing. For example, such an attack may convince a victim’s machine that a malicious machine is its default gateway. In this scenario, all traffic from the victim’s machine flows through the malicious device.

Support for ignoring GARP prevents spoofing attacks by introducing the ability to ignore any Gratuitous ARP replies. This feature can be enabled or disabled via a new configuration menu.

Incalls Key Display

The change will allow a customer to customize the ACD DN key number on IP sets. The customer will be provided with a configurable option, in Overlay 23, and can choose to display the ACD DN, “Incalls” or a string of their choice as a label for Key 0 on sets. The activation method will be via the stimulated keypad download when changes are made to specific prompts.

Survivable Remote Gateway 50 (SRG 50)

In addition to the existing SRG 1.0 model, which is positioned as the lower cost alternative to the Media Gateway 1000B (SBO), there will be a new “mini” model for the smaller branch office, known as the SRG 50. The SRG 50 is cost-optimized for the <32 user branch office. The SRG 50 is a parallel project to release 4.5 and will be released in the same timeframe as release 4.5. It will be supported by the Release 4.5 software and therefore is described in this document.

The Survivable Remote Gateway 50 (SRG 50) extends the desktop feature and user interface of the CS1000 to remote users and gives them full access to the same applications as the main site. CallPilot, Symposium Call Center applications, and many others can be seamlessly shared by remote users to deliver state-of-the-art features and functionality at even the smallest remote offices. The SRG 50 solution would be used at small remote sites of enterprise organizations that are deploying CS 1000 call server(s) at main office locations. These sites would range from 5-32 users, and be primarily equipped with Nortel’s IP terminals / clients. Analog devices such as fax machines and terminals are supported, but the intent is to provide basic access and support for a limited number of these devices. Nortel’s IP terminals/ clients are the primary voice communication appliance for branch office users.

The SRG 50 solution is based on the new BCM50 Embedded Linux technology platform, leveraging its stability, cost effectiveness and simplified management structure, and will exploit the flexible and rich service set of that platform. It will also ride the BCM evolution curve in order to achieve greater cost efficiencies and advanced capabilities moving forward to better address evolving market needs. SRG 50 allows distribution of trunking across the WAN so remote users can get dial tone from their local central office or from any other IP Telephony gateway hosted by CS1000. Local telephone numbers can be published supporting a local presence within the community the remote office supports. This capability can also reduce unnecessary toll charges and provides required local trunking for Emergency 911 calls.

SRG 50 will provide survivable branch telephony across the CS 1000 platforms. SRG 50 will support multiple platforms (CS 1000 and CS 2000) – increasing economies of scale and resource efficiencies, simplifying Nortel's VoIP solutions and eventually becoming the common survivable gateway solution.

The SRG will be connected by IP WAN connections to the CS1000 call servers and by trunks to the PSTN at the branch location. In Normal mode, branch IP clients will be serviced from the main call server and all centralized applications will be transparently delivered to the branch IP terminals. Should the WAN fail, then the SRG will provide basic voice services to the local IP terminals using the local PSTN connection until the main call server is once again available. Once the main call server is available, the branch IP clients will be redirected back to the main call server.

Software & Hardware Guidelines

Feature / Platform Availability Matrix

Feature/ Product	11C Mini	11C SSC	51C(CP3&4)	61C(CP3&4)	61C CPP	81C/CP3&CP4	81C CPP	CS 1000E	CS 1000S	CS 1000M	Notes
CP PIV				X	X	X	X	X			Refer to CP PIV section in Feature Description above
Adaptive Network Bandwidth Mgt	X	X	X	X	X	X	X	X	X	X	
Alternate Call Routing Network Bandwidth Management								X	X	X	
Active Call Failover	X	X	X	X	X	X	X	X	X	X	
Enhanced F/W Download								X	X	X	
Default Queue Management	X	X	X	X	X	X	X	X	X	X	
DSP Peg Counter								X			
ACD Capacity Increase					X		X	X		X	CP PIV Only
CLID Enhancements	X	X	X	X	X	X	X	X	X	X	
Campus Redundancy Enhancements								X			
IP Call Recording Ph 2								X	X	X	
Password Complexity	X	X	X	X	X	X	X	X	X	X	
Attenuator Bit for WLAN handsets	X	X	X	X	X	X	X	X	X	X	
Call Duration Timer											Set specific feature
801.1x Support											Set specific feature
VLAN Filtering											Set specific feature
Ignoring GARP											Set specific feature
Incalls Key Display											Set specific feature
SNMP Enhancements	X	X	X	X	X	X	X	X	X	X	
EM Enhancements								X	X	X	
PEP Monitoring Tool	X	X	X	X	X	X	X	X	X	X	

Feature/ Product	11 C Mini	11C SSC	51C(CP3&4)	61C(CP3&4)	61C CPP	81C/CP3&CP4	81C CPP	CS 1000E	CS 1000S	CS 1000M	Notes
OTM 2.2	X	X	X	X	X	X	X	X	X	X	
Element Manager								X	X	X	

New & Enhanced Software Packages and Applicable Systems

CS1000 R4.0 S/W Features	Software Package	Applicable System	Applicable Region
Adaptive Network Bandwidth management	407 (In Enhanced Business Service Package)	All except MG1000B	Global

New License and Applicable Systems

No new Licenses are introduced with Release 4.5.

System Compatibility Matrix

The following table details the release(s) of other Nortel applications that are compatible with Communication Server Release 4.5.

Auxiliary Processors	Compatibility Matrix				
	Option 11C, 11C Mini, 51C, 61C, 81, 81C CS 1000M	CS 1000S	CS 1000E	Branch Media Gateway MG 1000B (Branch Office)	Survivable Remote Gateway SRG1.0/SR G50
Attendant Console					
PC Console Interface Unit	Supported	Supported	Supported	Supported	Not supported
Meridian Attendant PC software	Supported	Supported	Supported	Supported	Not supported
M2250 Attendant Console	Supported As Is	Supported As Is	Supported As Is	Supported As Is	Not supported
M2016S Digital Secure Sets					
M2016S Secure Set (NA Only)	Supported	Supported	Supported	Supported	Not supported
M2000 Series Sets					
M2006	Supported	Supported	Supported	Supported	Not supported
M2008	Supported	Supported	Supported	Supported	Not supported
M2216	Supported	Supported	Supported	Supported	Not supported
M2616	Supported	Supported	Supported	Supported	Not supported
M3900 Sets					
M39xx	Supported	Supported	Supported	Supported	Not supported
System Management					
Optivity Telephony Manager	OTM 2.2	OTM 2.2	OTM 2.2	OTM 2.2	Required for main office configuration only

Auxiliary Processors	Compatibility Matrix				
	Option 11C, 11C Mini, 51C, 61C, 81, 81C CS 1000M	CS 1000S	CS 1000E	Branch Media Gateway MG 1000B (Branch Office)	Survivable Remote Gateway SRG1.0/SR G50
System Management					
Telephony Manager	TM 3.0 (GA Q4 '05)	TM 3.0 (GA Q4 '05)	TM 3.0 (GA Q4 '05)	TM 3.0 (GA Q4 '05)	Required for main office configuration only
Element Manager	EM 4.5	EM 4.5	EM 4.5	EM 4.5	Required for main office configuration only
Enterprise Subscriber Manager	1.0, 1.1	1.0, 1.1	1.0, 1.1	1.0, 1.1	1.0, 1.1
Messaging					
CallPilot	2.02 SU04, 3.0, 4.0	CP IPE Server ONLY -2.02 SU04, 3.0, 4.0	3.0, 4.0	3.0, 4.0	Supported on Main ¹
HMS 400	1.0, 1.1	1.0, 1.1	1.0, 1.1	Not Supported	Not Supported
CallPilot Mini	1.5A, 1.5B, 1.5C (not supported on Large Systems)	Not supported	Not supported	1.5A, 1.5B, 1.5C	Supported on Main ¹
Meridian Mail Modular Option EC	12.12, 13.14	Not supported directly	Not supported directly	Not supported	Not supported
Meridian Mail Enhanced Card	12.12, 13.14	Not supported directly	Not supported directly	12.12, 13.14	Supported on Main ¹
Companion					
Companion - Manufacture Discontinued new system packages on 1 January 2003	3.xx -7.xx (7.xx required for Enhanced Capacity) Release 4.0 was the effective latest in EMEA	Not supported	Not supported	Not supported	Not supported
IP Clients					
Nortel Integrated DECT	451000.xx / 470001.xx – SW embedded on IPE card	451000.xx / 470001.xx – SW embedded on IPE card	Supported on MG1000T only. Maximum of 7 DECT DMC cards until NNEC 6.4 when capacity increases to 15 cards.	451000.xx / 470001.xx – SW embedded on IPE card. Introducing Wireless Visitors.	Not supported
VoIP – 802.11 Wireless IP Gateway with Symbol	Application supported on ITG Pentium only 1.19 - Current 1.20 - Maintenance Up-issue	Application supported on ITG Pentium only.1.19 - Current, 1.20 - Maintenance Up-issue	Not supported	Not supported	Not supported

Auxiliary Processors	Compatibility Matrix				
	Option 11C, 11C Mini, 51C, 61C, 81, 81C CS 1000M	CS 1000S	CS 1000E	Branch Media Gateway MG 1000B (Branch Office)	Survivable Remote Gateway SRG1.0/SRG50
IP Clients					
IP Phone 2210 / 2211	Supported	Supported	Supported	Supported	Supported
IP Phone 2212	Supported	Supported	Supported	Supported	Not Supported
IP Phone 2001	Supported	Supported	Supported	Supported	Supported on SRG50. Supported on SRG 1.0 if BCM 3.7 based.
IP Phone 2002	Supported	Supported	Supported	Supported	Supported
IP Phone 2004	Supported	Supported	Supported	Supported	Supported
Softphone 2050	Supported	Supported	Supported	Supported	Supported
Mobile Voice Client 2050	Supported	Supported	Supported	Supported	Supported
IP Phone 2033	Supported	Supported	Supported	Supported	Not Supported
IP Phone ACD Set	Supported When GA	Supported When GA	Supported When GA	Supported When GA	Not supported
IP Phone 2007	Supported	Supported	Supported	Supported	Supported on SRG50
IP Phone 1120E	Supported	Supported	Supported	Supported	Supported
IP Phone 1140E	Supported	Supported	Supported	Supported	Supported
Remote Office Portfolio					
Remote Gateway 9110/ IP Adaptor	Not Supported	Not Supported	Not Supported	Not Supported	Not Supported
Remote Gateway 9115	1.4.2, 1.5.2, 1.6.0	Not supported	Not supported	Not supported	Not Supported
Remote Gateway 9150	1.4.1, 1.4.2, 1.5.2, 1.6.0	Not Supported.	Not Supported.	Not Supported	Not Supported
Meridian Home Office MHO-II	Not Supported	Not Supported	Not Supported	Not Supported	Not Supported
Mini Carrier Remote	12.02, 12.03	Not Supported	Not Supported	Not Supported	Not Supported
Carrier Remote	7.03	Not Supported	Not Supported	Not Supported	Not Supported

Auxiliary Processors	Compatibility Matrix				
	Option 11C, 11C Mini, 51C, 61C, 81, 81C CS 1000M	CS 1000S	CS 1000E	Branch Media Gateway MG 1000B (Branch Office)	Survivable Remote Gateway SRG1.0/SR G50
Remote Office Portfolio					
Fiber I	Not Supported	Not Supported	Not Supported	Not Supported	Not Supported
Fiber Remote Multi IPE	Supported in Large Meridian 1 (61C-81C) & Large CS 1000M only	Not Supported	Not Supported	Not Supported	Not Supported
LineSide T1/E1	2.03	Not supported	Not Supported	Not Supported	Not Supported
Enhanced LineSide T1/E1	3.06	Not supported	Not Supported	Not Supported	Not Supported
RPE (Remote Peripheral Equipment)	Not supported	Not supported	Not Supported	Not Supported	Not Supported
Retired Call Center Applications					
Meridian MAX [any platform]	Not supported	Not supported	Not supported	Not supported	Not supported
Network Administration Center [NAC]	Not supported	Not supported	Not supported	Not supported	Not supported
Meridian Customer Controlled Routing [MCCR]	Not supported	Not supported	Not supported	Not supported	Not supported
Meridian Link [Mlink]	Not supported	Not supported	Not supported	Not supported	Not supported
Symposium Link	Not supported	Not supported	Not supported	Not Supported	Not Supported
Symposium Desktop TAPI Service Provider for MCA)	Not supported	Not supported	Not Supported	Not Supported	Not Supported
Meridian Link & MCCR	Not supported	Not supported	Not supported	Not supported	Not supported

Auxiliary Processors	Compatibility Matrix				
	Option 11C, 11C Mini, 51C, 61C, 81, 81C CS 1000M	CS 1000S	CS 1000E	Branch Media Gateway MG 1000B (Branch Office)	Survivable Remote Gateway SRG1.0/SR G50
Symposium Call Center and CTI Applications					
Symposium TAPI Service Provider	3.0	3.0	3.0	Supported on Main ²	Supported on Main ¹
Symposium Agent	2.3	2.3	2.3	Supported on Main ²	Supported on Main ¹
Symposium Agent Greeting	2.0	2.0	2.0	Supported on Main ²	Supported on Main ¹
Nortel Remote Agent Observe	1.0	1.0	1.0	Supported on Main ²	Supported on Main ¹
Meridian Link Services [MLS]	5.0	5.0	5.0	Supported on Main ²	Supported on Main ¹
Symposium Express Call Center [SECC]	4.2	4.2	4.2	Supported on Main ²	Supported on Main ¹
Symposium Call Center Server [SCCS] incl. Symposium Web Client	5.0	5.0	5.0	Supported on Main ²	Supported on Main ¹
Symposium Web Centre Portal [SWCP]	4.0	4.0	4.0	Supported on Main ²	Supported on Main ¹
Nortel Communication Control Toolkit (CCT)	5.0	5.0	5.0	Supported on Main ²	Supported on Main ¹

Auxiliary Processors	Compatibility Matrix				
	Option 11C, 11C Mini, 51C, 61C, 81, 81C CS 1000M	CS 1000S	CS 1000E	Branch Media Gateway MG 1000B (Branch Office)	Survivable Remote Gateway SRG1.0/SR G50
Periphonics IVR Applications					
Periphonics IVR (VPS/is)	5.x	5.4.2	5.4.2	Supported on Main ²	Supported on Main ¹
Nortel Communication Control Toolkit (CCT) for VPS/is and MPS500/1000	5.0, 6.0	5.0, 6.0	5.0, 6.0	Supported on Main ²	Supported on Main ¹
Periphonics Multimedia Processing Server (MPS) 100	1.0	1.0	1.0	Supported on Main ²	Supported on Main ¹
Periphonics Multimedia Processing Server - MPS 500, MPS 1000	2.1, 3.0	2.1, 3.0	2.1, 3.0	Supported on Main ²	Supported on Main ¹
Periphonics Integrated Package for Meridian Link (IPML) – MPS 500, MPS 1000	2.1, 3.0	2.1, 3.0	2.1, 3.0	Supported on Main ²	Supported on Main ¹
Business Communication Manager					
Business Communications Manager	3.5, 3.6, 3.7, 4.0	3.5, 3.6, 3.7, 4.0	3.5, 3.6, 3.7, 4.0	Not Applicable	Not Applicable

Auxiliary Processors	Compatibility Matrix				
	Option 11C, 11C Mini, 51C, 61C, 81, 81C CS 1000M	CS 1000S	CS 1000E	Branch Media Gateway MG 1000B (Branch Office)	Survivable Remote Gateway SRG1.0/SR G50
	MIXX Portfolio				
Integrated Call Assistant (MICA)	1.5	1.5	1.5	Supported on Main ²	Supported on Main ¹
Nortel Integrated Conference Bridge (NNICB)	2.1, 3.0x, 4.0	2.1, 3.0x, 4.0	2.1, 3.0x, 4.0	2.1, 3.0x, 4.0	Supported on Main ¹
Integrated Recorded Announcement (MIRAN)	2.0.16 and above	2.0.16 and above	2.0.16 and above	2.0.16 and above	Supported on Main ¹
Nortel Personal Call Director	1.0.3 and above, 2.0	1.0.3 and above, 2.0	1.0.3 and above, 2.0	Supported on Main ²	Supported on Main ¹
Integrated Hospitality Services	1.17	1.17	1.17	Supported on Main ²	Supported on Main ¹
	MCS				
MCS 5100	2.0, 3.0, 3.5	2.0, 3.0, 3.5	3, 3.5	3, 3.5	Supported on Main ¹
	CS 2x00				
CS 2000	SN07, SN08, SN09	SN07, SN08, SN09	SN07, SN08, SN09	Not Supported	Not Supported
CS 2100	SE07, SE08, SE09	SE07, SE08, SE09	SE07, SE08, SE09	SE07, SE08, SE09	Not Supported

Supported 1: Support of SRG IP users via Main Office only (Normal mode). HW not supported directly on SRG unit.

Supported 2: Support of SBO IP users via Main Office only (Normal mode). HW not supported directly on SBO unit.

Communication Server 1000 Release 4.5 Software Listing

Do not attempt to operate the system with the initial/previous loads of software, the correct software versions are listed below:

• Call Server	X2104.50W
○ Install disk	29
○ PSDL	115
○ FIJI Loadware	19
• Signaling Server	4.50.25
• IP Line Application	4.50.25
• IP Trunk Application	3.01.60
• IP Set (phase 0,1) F/W*	B76
• IP Set (phase 2) F/W*	D98
• IP Set 2007	C22 (C24 - When available)
• IP Audio Conference Phone 2033	S10
• M3902	ver.8.4
• M3903	ver.8.7
• M3904	ver.8.9
• M3905	ver.8.9
• XA firmware	6.8 for SMC non NTVQ01AB/NTVQ01BB 8.2 for SMC NTVQ01AB/NTVQ01BB 5.7 for ITG-P
• i2050 software telephone	build 385
• OTM	2.20.78
• WLAN Handsets 2210/2211/2212	97.060

Communication Server 1000 Release 4.5 PSDL Listing

Loadware	X21 03.00 PSWV 88	X21 04.00T PSWV 111	X21 04.50W PSWV 115
LCRI	LOADAA02	LOADAA02	LOADAA02
XNET	LOADAC23	LOADAC23	LOADAC23
XPEC	LOADAC38	LOADAC40	LOADAC40
FNET	LOADAA06	LOADAA07	LOADAA07
FPEC	LOADAA07	LOADAA08	LOADAA08
MSDL	LOADAJ71	LOADAJ73	LOADAJ73
ASYN (SDI)	LOADAH51	LOADAH51	LOADAH51
DCH1 (DCH)	LOADAJ71	LOADAJ71	LOADAJ72*
MLNK (AML)	LOADAK81	LOADAK81	LOADAK81
BRIL	LOADAK83	LOADAK83	LOADAK83
BRIT	LOADAK82	LOADAK82	LOADAK82
MISP	LOADAJ71	LOADAJ71	LOADAJ71
MPHA (MPH)	LOADAH51	LOADAH51	LOADAH51
BRSC	LOADAJ71	LOADAJ71	LOADAJ71
BBRI	LOADAH54	LOADAH54	LOADAH54
PUPE (PRIE)	LOADAK83	LOADAA83	LOADAA84*
BRIE	LOADAK86	LOADAK86	LOADAK86
ISIG	LOADAA33	LOADAA33	LOADAA33
SWE1	LOADBA50	LOADBA51	LOADBA52*
UKG1	LOADBA47	LOADBA48	LOADBA49*
AUS1	LOADBA47	LOADBA47	LOADBA48*
DEN1	LOADBA47	LOADBA47	LOADBA48*
FIN1	LOADBA47	LOADBA47	LOADBA48*
GER1	LOADBA52	LOADBA52	LOADBA53*
ITA1	LOADAA52	LOADBA52	LOADBA53*
NOR1	LOADBA47	LOADBA47	LOADBA48*
POR1	LOADBA47	LOADBA47	LOADBA48*
DUT1	LOADBA47	LOADBA47	LOADBA48*
EIR1	LOADBA47	LOADBA47	LOADBA48*
SWI1	LOADBA51	LOADBA51	LOADBA52*
BEL1	LOADBA47	LOADBA47	LOADBA48*

*New loadware with X210450

Loadware	X21 03.00 PSWV 88	X21 04.00T PSWV 111	X21 04.50W PSWV 115
SPA1	LOADBA47	LOADBA47	LOADBA48*
NET1	LOADBA48	LOADBA48	LOADBA48
FRA1	LOADBA50	LOADBA50	LOADBA51*
CIS1	LOADBA46	LOADBA46	LOADBA47*
ETSI	LOADBA47	LOADBA47	LOADBA48*
E403	LOADBA07	LOADBA07	LOADBA07
N403	LOADBA05	LOADBA05	LOADBA05
JTTC	LOADAC08	LOADAC08	LOADAC08
TCNZ	LOADAA13	LOADAA13	LOADAA13
AUBR	LOADAA14	LOADAA14	LOADAA14
AUPR	LOADAA04	LOADAA04	LOADAA04
HKBR	LOADAA06	LOADAA06	LOADAA06
HKPR	LOADAA08	LOADAA08	LOADAA08
SING	LOADAA15	LOADAA15	LOADAA15
THAI	LOADAA07	LOADAA07	LOADAA07
NI02	LOADAA24	LOADAA25	LOADAA26*
TIIS	LOADAA10	LOADAA10	LOADAA10
TIES	LOADAA09	LOADAA09	LOADAA09
ESGF	LOADAC26	LOADAC28	LOADAC29*
ISGF	LOADAC24	LOADAC27	LOADAC28*
TEGF (ESGFTI)	LOADAC25	LOADAC27	LOADAC28*
TIGF (ISGFTI)	LOADAC23	LOADAC26	LOADAC27*
INDO	LOADAA06	LOADAA06	LOADAA06
JAPN	LOADAA16	LOADAA16	LOADAA16
MSIA	LOADAA04	LOADAA04	LOADAA04
CHNA	LOADAA04	LOADAA04	LOADAA04
INDI	LOADAA03	LOADAA03	LOADAA03
PHLP	LOADAA02	LOADAA02	LOADAA02
TAIW	LOADAA03	LOADAA03	LOADAA03
EAUS	LOADAA02	LOADAA02	LOADAA02
EGF4	LOADAC09	LOADAC12	LOADAC12
DCH3	LOADAA09	LOADAA09	LOADAA10*
PUP3	LOADAA09	LOADAA10	LOADAA11*
TIE1	LOADAA16	LOADAA16	LOADAA16
DITI	LOADAA38	LOADAA38	LOADAA39*
CLKC[NTRB53]	LOADAA14	LOADAA14	LOADAA16*

* New loadware with X210450

Loadware	X21 03.00 PSWV 88	X21 04.00T PSWV 111	X21 04.50W PSWV 115
M3900 Loadware	M3900 Phase III	M3900 Phase III	M3900 Phase II
1.Global Languages Set			
M3902	LOADAA82	LOADAA84	LOADAA84
M3903	LOADAA85	LOADAA87	LOADAA87
M3904	LOADAA87	LOADAA89	LOADAA89
M3905	LOADAA87	LOADAA89	LOADAA89
2.Western Europe Languages Set			
M3902	LOADBA82	LOADBA84	LOADBA84
M3903	LOADBA85	LOADBA87	LOADBA87
M3904	LOADBA87	LOADBA89	LOADBA89
M3905	LOADBA87	LOADBA89	LOADBA89
3.Eastern Europe Languages Set			
M3902	LOADCA82	LOADCA84	LOADCA84
M3903	LOADCA85	LOADCA87	LOADCA87
M3904	LOADCA87	LOADCA89	LOADCA89
M3905	LOADCA87	LOADCA89	LOADCA89
4.North America Languages Set			
M3902	LOADDA82	LOADDA84	LOADDA84
M3903	LOADDA85	LOADDA87	LOADDA87
M3904	LOADDA87	LOADDA89	LOADDA89
M3905	LOADDA87	LOADDA89	LOADDA89
5. Spare Languages Set			
M3902	LOADCA41	LOADCA41	
M3903	LOADAA52	LOADAA52	
M3904	LOADAA46	LOADAA46	
M3905	LOADAA32	LOADAA32	
6. Spare Languages Set			
M3902	LOADAA40	LOADAA40	LOADAA41*
M3903	LOADAA52	LOADAA52	LOADAA52
M3904	LOADAA46	LOADAA46	LOADAA46
M3905	LOADAA32	LOADAA32	LOADAA32

* New loadware with X210450

Software Lifecycle Management

Software status will change with Communication Server 1000 Release 4.5. The new designations are as follows:

- Current:
 - Communication Server Release 4.5 (X21Release 4.5).
- Sustained:
 - X11 Releases 24C/25.08, 25.10, 25.15, 25.30, 25.40, 25.40B.
 - X21 Releases 2.0, 3.0, 4.0
- Retired
 - X11 Releases 23.xx, 24.xx.
 - X21 Releases 1.x.
 - Note: Release 25.08 can still upgrade to 25.40. Not applicable to EMEA & CALA.
- End of Life
 - X11 Releases 16.xx, 17.xx, 18.xx, 19.xx, 20.xx, 21.xx, 22.xx.
 - Release 23 will be EOL status in Q4 2005

*Note that all releases are not applicable to all regions.

End of Life – This state applies to products that are no longer supported by design, manufacturing, technical support, and other elements of customer service. At this point, there will be no Nortel support of any type for this product.

Retired (Manufacture Discontinued) – This state applies to products that are no longer supported by manufacturing and related processes. As per terms of contracts, Retired products will continue to be supported for design maintenance and administration of field impacting issues and changes as required. For hardware designated as Retired, these products are no longer for sale, except to deplete and existing stock, and Nortel's discretion. For software, the Retired state indicates that the product is no longer available for upgrades (to) or expansions.

Sustained – For hardware, if the demand for the product decreases to a point where volume manufacture is no longer viable or a functional replacement becomes available, the product may be rated Sustained to support existing systems in the field only. A new software release will become Current and trigger a rating change of the replaced Current release to Sustained. Sustained software becomes available for Expansions (additional features or additional capacity) within the existing systems in the field only.

Current – Hardware and software products which are available for new system sales.

Mixed Software: Main and Branch Office

It is recommended that the software release on the Branch Office always match the software release on the Main office. However, it is possible for the main office Call Server and the MG 1000B Core to have different software releases, as long as the main office is running a release that is higher than or equal to that of the branch office. The MG 1000B cannot be a higher software release than the Main.

When CS 1000, Release 4.0 was introduced, the mixed software policy stated that if the Main Office Call Server was on CS 1000, Release 4.0, the Branch offices could run on Release 4.0 or 3.0 software. With the introduction of CS 1000, Release 4.5, our policy is such that if a Main Office Call Server is on CS 1000, Release 4.5, the Branch Offices can run on CS 1000, Release 4.5, 4.0 or 3.0. Similarly, with the introduction of the CS 1000, Release 5.0 program, our policy will be if the Main Office Call Server is on Release 5.0, the Branch Offices will be able to on Release 5.0, Release 4.5 or Release 4.0.

Software Conversion

Option 11C Cabinet

Automatic conversion is supported directly to Communication Server 1000 Release 4.5 software from the following releases: 16, 18, 20, 21, 22, 23, 24, 25, 2.0, 3.0, 4.0

Option 11C Chassis

Automatic conversion is supported directly to Communication Server 1000 Release 4.5 from release 24, 25, 2.0, 3.0, 4.0.

Communication Server 1000M

Automatic conversion is supported directly to Communication Server 1000 Release 4.5 from release 3.0 and 4.0

Communication Server 1000S

Automatic conversion is supported directly to Communication Server 1000 Release 4.5 from release 1.0, 1.1, 2.0, 3.0 and 4.0

Communication 1000E

Automatic conversion is supported directly to Communication Server 1000 Release 4.5 from release 4.0

Option 51C, 61C, 81, 81C

Conversion to Communication Server 1000 Release 4.5 is supported with large system platforms equipped with Commercial processor only: (Motorola 68000 platform CP1, CP2, CP3, CP4 and Intel Pentium II & IV). Automatic conversion is supported directly to Communication Server 1000 Release 4.5 from release 19 and above from these CPs

CP1 & CP2 processors are not supported with Release 4.5, systems equipped with these processors must perform a hardware upgrade to a supported call processor (CP4, CPPII or CP PIV) at which point conversion from a CP1/CP2 processor to the new target machine can take place. It is recommended to upgrade to the CPPIV.

*Not all releases were made available in all markets

**If the system is running pre release 19 software or the source platform is Meridian OP21/21E, ST/STE, 51, 61, 71, 81, NT, XT, the database must be sent to Nortel for conversion. Contact Ellen O'berry at 408 495 0511 or Joe Chandler at 408 495 0089.

Hardware MD & EOL

There is no hardware that is being Manufacture Discontinued or End of Life with the introduction of Release 4.5.

Software Downloads

The software download website is designed for Nortel Distributors, Partners and associated technical support personnel. In exceptional circumstances, end customers will be granted access to this site.

To register for an account:

Nortel has adopted the Common Registration System (CRS). This provides one user I.D. and password to access the service websites such as the Software Download and Keycode Retrieval websites.

Go to <http://www.nortel.com/>. Under “Support & Training” banner, choose “Software Downloads”. At the left side bar, choose “Register” and follow the registration process instructions.

Software Download Steps

Once registered, go to the Nortel Customer Portal web site at the following URL:

<http://www.nortel.com> Under “Support & Training” banner, choose “Software Downloads” menu.

You will be able to view software on this page as a Guest only. To access the software as an authorized user, you must go to the “Log in” menu and apply your user I.D. and password.

Choose “**Communication Servers**” from the Product Family menu; then choose the applicable product from the ‘By Product Category’ - **Voice & IP Communications** – for example, choose “**Communication Server 1000E**”. Click on the product’s Software link.

Software is available for the following platforms:

- Communication Server 1000S (includes Media Gateway 1000B)
- Communication Server 1000M Cabinet/Chassis
- Communication Server 1000M Half Group/Single Group/Multi-Group
- Communication Server 1000E

Other products available at other locations on the software download site include:

- Signaling Server and IP Peer Networking
- IP Line and Voice Gateway Media Cards (VGMC)
- i2004 Internet Telephone: Now known as: IP Phone 2004
- i2002 Internet Telephone: Now known as: IP Phone 2002
- i2050 Software Phone: Now known as: IP Softphone 2050
- IP Phone 2001
- IP Phone 2007
- IP Audio Conference Phone 2033
- Survivable Remote Gateway (SRG)
- WLAN - Handsets 2210
- WLAN - Handsets 2211
- WLAN - Handsets 2212
- WLAN - IP Telephony Manager 2245

Find the software file required within the applicable product chosen (search by release may be available for some products). Click on your software selection. Then click on the executable or image file and/or applicable documentation file and save to your desktop. (If you do not see any software files available, you may need to go to "My Profile" menu and make sure the Software box is checked. For further details, choose the "Help Using this Site" menu option. Please note that the MG1000T software is the same as the CS1000S software.

WLAN Handsets 2210/2211 Firmware Download

Handsets shipped from the factory do not have the UNISTIM firmware installed. The handset firmware must be downloaded from the Nortel Electronic Software Delivery (ESD) web site.

To download the file from this site, follow these instructions:

Note: You will need to log in to complete the steps below.

1. Access the www.nortel.com web site.
2. Select "**Software Downloads**" from the "**Support & Training**" section.
3. Select "**W**" from the "**Products A – Z**" selection window.
4. Then select "**WLAN - Handsets 2210**" or "**WLAN - Handsets 2211**" or "**WLAN - Handsets 2212**" from the Product selection window.
5. Select "**Software**".
6. Finally, select the [WLAN - Handsets 2210/2211/2212 Firmware version 97.060](#) link and download the file.

The file name is:

- 221x_rls97.060.zip (handset zipped file), which includes:
 - slnk_cfg.cfg
 - pd11usc.bin
 - phintl24.bin

WLAN IP Telephony Manager 2245 Software

The version of the 2245 software load associated to these release notes is 174.007 (filename 2245_rls174.007.zip). Although the unit is shipped with the software installed, the software can be downloaded from the Nortel's Electronic Software Delivery web site.

To download the file from this site, follow these instructions:

Note: You will need to log in to complete the steps below.

1. Access the www.nortel.com web site.
2. Select "**Software Downloads**" from the "**Support & Training**" section.
3. Select "**W**" from the "**Products A – Z**" selection window.
4. Then select "**WLAN – IP Telephony Manager**" from the *Product* selection window.
5. Select "**Software**".
6. Finally, select the [WLAN – IP Telephony Manager 2245 version 174.012](#) link and download the file.

The file name is:

- 2245_rls174.012.zip, which includes:
 - zvmlinux
 - SVP100.toc
 - flashfs

To download the WLAN IP Telephony Feature Patch for **SRG 1.0**, follow these instructions:

Note: You will need to log in to complete the steps below.

- Directly access the ESD website through this link <http://www130.nortel.com/cgi-bin/eserv/cs/main.jsp>
- In box 1, select "**Succession->Succession Enterprise**" as the Product Family
- In box 2, select "**Survivable Remote Gateway (SRG)**" as the Product
- In box 3, select "**Software**"
- Lastly, hit "Go".

Engineering Considerations

Capacity

Communication Server 1000 System Capacity

Since IP and TDM telephony consume differing amounts of processing power, the total number of sets that a particular platform can support will depend on the type of traffic as well as the physical capacity and applications of a specific configuration. The following table summarizes the capacities of CS 1000M Small and Large Systems, CS 1000S, and CS 1000E systems. Values in each cell indicate the total number of sets that can be supported in a particular configuration. These values are calculated from the point of view of call server processing capacity, not from the point of view of physical card slot capacity. Please note that the values in each cell are exclusive, not additive.

Call Server	Platform Name	Pure TDM	IP Access to PSTN	Pure IP No access to PSTN	Mixed
MSC	Communication Server 1000M Chassis	160	800	800	112 TDM 300 IP
SSC	Communication Server 1000S	480	1,000	1,000	400 TDM 700 IP
SSC	Communication Server 1000M Chassis	720	1,000	1,000	640 TDM 800 IP
SSC	Communication Server 1000M Cabinet	720	1,000	1,000	600 TDM 1,000 IP
CP3 / CP4	Communication Server 1000M HG	1,000	1,000	2,000	500 TDM 500 IP
CP3 / CP4	Communication Server 1000M SG	2,000	2,000	3,000	1,000 TDM 1,000 IP
CP3 / CP4	Communication Server 1000M MG	4,000	3,000	3,000	2,500 TDM 1,000 IP
CP PII / PIV	Communication Server 1000M SG	2,000	3,000	5,000	1,000 TDM 2,000 IP

Call Server	Platform Name	Pure TDM	IP Access to PSTN	Pure IP No access to PSTN	Mixed
CP PII / PIV	Communication Server 1000M MG	16,000	15,000	15,000	8000 TDM & 5000 IP 10000 TDM & 4000 IP 12000 TDM & 3600 IP
CP PII / PIV	Communication Server 1000E	3,000	NA	15,000	3,000 TDM 10,000 IP

Caveats:

- Requires using Signaling Servers for TPS
- NNEC and NTP's are used to calculate practical values pre configuration
- Once beyond these limits need to be engineered on a case by case basis.
- 8 - 15 % digital trunking to PSTN and no applications

Maximum number of SIP and H.323 Virtual Trunks

The maximum number of SIP and H.323 channels available on each Signaling Server depends on the number of available File Descriptors (FD) for Virtual Trunks. The maximum number of FDs for Virtual Trunks on each Signaling Server is 1800.

- Each SIP call uses one FD.
- Each incoming H.323 call uses two FD.
- Each outgoing H.323 call uses one FD.

When no more FDs are available (available FD = 0), new channels added on the Call Server will not be able to register on the Signaling Server. Each Signaling Server supports up to 1800 Virtual Trunks. The maximum number of SIP and H.323 trunks will depend on traffic patterns, both the split between SIP and H.323 calls and the split between incoming and outgoing H.323 calls. The table below gives examples of the maximum number of Virtual Trunks supported for different configurations.

SIP	H.323*			Total Virtual Trunks
	Incoming	Outgoing	Total H.323	
1800	0	0	0	1800
0	600	600	1200	1200
0	900	0	900	900
600	0	1200	1200	1800
600	300	600	900	1500
* Assumes H.245 tunneling enabled.				

IP Telephony Node Maximums

The maximum number of Voice Gateway Media Cards per node is 30. When more than 30 Voice Gateway Media Cards are needed on a single CS 1000M Large System or a CS 1000E, use multiple nodes. The maximum number of Signaling Servers and Voice Gateway Media Cards combined within a node is 35.

Application server for PD/CL/RL

The database for the PD/CL/RL feature for IP Phones must be located on one Signaling Server. The applications cannot be divided: all users in a system will either have the combined PD/CL/RL feature or no feature at all. The Signaling Server can support a database for up to 15 000 users.

- **Personal Directory:** Stores up to 100 entries per user of user names and DNs.
- **Callers List:** Stores up to 100 entries per user of caller ID information and most recent call time.
- **Redial List:** Stores up to 20 entries per user of dialed DNs and received Call Party Name Display with time and date.

The Signaling Server requires a minimum of 512 Mbyte of memory in order to support the PD/CL/RL application. If the system size is relatively small, in terms of number of users as well as calling rates, one Signaling Server can serve both database and normal Signaling Server functions. With the PD/CL/RL database co-resident with other applications (TPS, H.323/SIP Gateways, NRS, Element Manager), a Signaling Server with 512 MByte of memory can serve up to 1000 IP users and 382 Virtual Trunks. For larger systems, one additional Signaling Server, on top of the normal requirement for handling signaling traffic, will be required for the PD/CL/RL feature.

From a memory perspective, a 512 MByte Signaling Server not running the PD/RL/CL application can support all other Signaling Server functions simultaneously, up to their configurable maxima. There is no need to exceed 512 MBytes in any non-PD/RL/CL application. However, there are real-time and other engineering limitations that will limit this in practice, and every case is different. The NNEC tool has the engineering rules built-in, and systems should always be configured using this tool.

The amount of memory required to support the PD/CL/RL application on the Signaling Server depends on the number of IP users and the configuration.

PD/RL/CL Configuration	Number of IP Users	Number of Virtual Trunks	Required Memory
Co-resident with other applications	<= 1000	<= 382	512 MB
Stand-alone	1000 – 8,000	0	512 MB
Stand-Alone	8,000 – 15,000	0	1 GB

Further details regarding the Engineering rules can be found in the following Planning and Engineering NTPs:

- Communication Server 1000E: Planning and Engineering
- Communication Server 1000S: Planning and Engineering
- Communication Server 1000M and Meridian 1: Small System Planning and Engineering
- Communication Server 1000M and Meridian 1: Large System Planning and Engineering

Memory Requirements

Large Systems 68060/68060E (CP3/4) Processors

System	Flash Memory Requirements	DRAM Memory Requirements	Total Memory
Option 51C/61C with CP3 (68060) or CP4 (68060E)	64 MB	64 MB	128 MB
Option 81/81C (with or without FNF)	64 MB	96 MB	160 MB

Large Systems Pentium® CP PII Processors

System	Flash Memory Requirements	DRAM Memory Requirements	Total Memory
Option 61C / CS1000M SG	N/A	256 MB	256 MB
Option 81C (with or without FNF) / CS1000M MG / CS1000E	N/A	256 MB	256 MB

Large Systems Pentium® CP PIV Processors

System	Flash Memory Requirements	DRAM Memory Requirements	Total Memory
Option 61C / CS1000M SG	N/A	512 MB	512 MB
Option 81C (only supports FNF no IGS) / CS1000M MG / CS1000E	N/A	512 MB	512 MB

Small Systems

System	Flash Memory Daughterboard Requirements	DRAM Memory Requirements
Option 11C/CS 1000M Cabinet or	32 MB Program Store + 16 MB	32 MB

System	Flash Memory Daughterboard Requirements	DRAM Memory Requirements
Chassis		
Option 11C /CS 1000M Chassis with MSC (provisional)	32 MB Program Store + 16 MB	16 MB**

Since the DRAM memory requirement is new, existing installed base systems will have to upgrade the memory. This applies to all SSCs, whether in a main processor application, a Media Gateway 1000S, or a Media Gateway 1000B and would include any SSC systems converted to a Media Gateway 1000T or a Media Gateway 1000E. This upgrade requirement applies to all previous vintages of the SSC. This upgrade requirement applies to all previous vintages of the SSC. A Memory Upgrade kit NTDK19BA is available to upgrade DRAM SIMM on any SSC (except NTDK20AB Release 1-5) to 32 MB. Note that, because of the evolution of the NTDK20, simply adding the memory upgrade will not automatically convert any SSC into a NTDK20HA. New systems will ship with a NTDK20HA, which has 32 MB DRAM.

Note that systems with MSC will have a restricted configuration, because they only have 16 MB of DRAM Memory, which cannot be increased. This is limited to:

- Less than 800 IP TNs (Pure IP)
- Less than 160 TDM TNs (Pure TDM)
- Less than 160 TDM TNs and 300 IP TNs (Mixed TDM and IP)
- Less than 2000 Corporate Directory entries (any TN configuration)
- Less than 4,000 ESN Location Codes. The small system sends a warning message when the craftsperson attempts to configure the MXLC prompt greater than 4000, but does not prevent additional location codes from being entered. In practice, approximately 6,000 LOC entries for 4-digit LOCs, and approximately 4,000 LOC entries for 7-digits can be configured, but the exact number depends on the tree structure employed and is difficult to engineer. If an MSC based system is operating outside these limits, it will have to be upgraded with an SSC NTDK20HA.

Although some MSC and SSC based systems may appear initially to operate outside these limits with only 16 MB of DRAM, this can lead to unpredictable effects, and will not leave sufficient space for any future patching activity. This is not a supported configuration.

The Flash Memory requirement is unchanged from Succession Release 3.0. However, to provide future protection against possible software program store increases, new systems will ship with at least 48 MB of program store (+ 16 MB Base Flash).

Minimum vintages for the Small System Controller are

- Non-IP Expansion Systems
 - NTDK20AB-GA SSC + NTDK19BA SSC Memory Upgrade Kit (32Mb)
 - NTDK20HA
- IP Expansion or CS 1000 Systems
 - Main Cabinet: NTDK20EA-GA SSC + NTDK19BA SSC Memory Upgrade Kit (32Mb)

- Each Expansion cabinet: NTDK20AB-GA SSC + NTDK19BA SSC Memory Upgrade Kit (32Mb)
- NTDK20HA
- Media Gateway 1000E in CS 1000E systems
 - NTDK20GA SSC + NTDK19BA SSC Memory Upgrade Kit (32Mb)
 - NTDK20HA

** Note: systems with MSC will have a restricted configuration:

Less than 800 IP TNs (no TDM TNs)

Up to 128 TDM TNs

Less than 2000 Corporate Directory entries

Less than 4000 ESN Location Codes

***The SSC memory upgrade kit is available as NTDK19BA

The pre-programmed software daughterboard code and versions Release 4.50W can be identified as follows:

APPLICABLE MARKET	CS 1000S / 1000T	CS 1000 MEDIA GATEWAY 1000B	CS 1000M CABINET/CHASSIS M1 OPTION 11C CABINET/CHASSIS
North America / CALA regions	NTM400AF R10	NTMP50AF R10	NTSK01AC R13
Asia Pacific / EMEA regions	NTM410AF R10	NTMP50AF R10	NTSK40AC R13
DSN Market	NTSK14AG R08	N/A	NTSK14AG R08

REFER TO THE INSTALLER'S CHECKLIST PROVIDED WITH THE SOFTWARE MEDIA FOR UPDATES.

The software version can be identified by the Product Issue of the pre-programmed software daughterboard or preprogrammed software PCMCIA Card. Product Issue may be determined by locating the label identifying the product code (i.e. NTM400AE; NTSK01AB) on either the software box (REL#) or on the software daughterboard or PCMCIA label. The pre-programmed PCMCIA card is identified with the letter B (ie. NTM400BE; NTSK01BE). The Product Issue is the two digit number immediately following the product code (ie. NTM400AF 10; NTSK01AC 13).

Signaling Server

Communication Server Release 4.5 requires that all Signaling Servers have a minimum of 512 MB of memory. Signaling Servers with 512 MB memory were introduced in Succession 3.0, but prior to that time signaling servers were shipped with 256 MB. Users who have 256 MB signaling servers are required to upgrade their memory before the installation of Release 4.5 using the **NTDU80CA Upgrade Kit**.

Users may determine the amount of physical memory installed in their signaling server using one of the following three options:

- 1) Issuing the command "sysPhysMemTop" in the VxWorks shell
- 2) During boot-up the BIOS prints the amount of detected memory
- 3) Check the label at the back of the chassis

Any system running PD/RL/CL with over 8,000 IP users are required to have to 1 GB of installed memory in the Signaling Server providing the PD/RL/CL function. Memory Upgrade Kits are available to upgrade to either 512 MB (one kit) or 1 GB (two kits).

Users who try and install Release 4.5 software on a 256 MB Signaling Server will have the following warning displayed:

```
CS 1000 Signaling Server Software Install Tool
```

```
=====
```

```
*** WARNING: This system has less than 512 MB RAM.  
*** In order to run Rls 4.5 software you must  
*** upgrade RAM to 512MB and repeat install.  
*** Otherwise serious service problems are likely.
```

Recommended Critical Spares

Spares related to new hardware products introduced in Release 4.5 are mentioned here and as such, there are no new recommended critical spares for Release 4.5. For recommendations of Spares for existing products, please see NTP 553-3001-153.

Ordering

This section discusses changes to the existing suite of Engineering and Configuration tools, and the Product Catalog. It assumes that the reader is familiar with existing tools.

Global Software Structure

Software Delivery

Release 4.5 builds on the **Customer Value Software Delivery (CVSD)** global software structure and process introduced in Release 3.0, which significantly simplified the Commercial Offer and the Customer ordering process.

CVSD Function and Purpose

Five Service Levels – with defined value propositions for each, with focus on selling functionality, not individual features:

- User Licenses for each of the five Service Levels
- System level Licenses
- Clear migration path to Converged IP/Telephony Solutions
- Clear Software Upgrade paths
- Combats Grey Market activities.

CVSD Support Processes

Use of the OrderPro tool is required to upgrade pre-CVSD (or FBP in EMEA) systems to Release 4.5. The process outlined below follows that introduced in Release 3.0. OrderPro is mandatory for all Meridian 1 Release 15 and later upgrades to CVSD. Software order forms are no longer required.

- Continued usage of the Release 3.0 process to Upgrade Pre-Release 15 systems to CVSD. Software order forms have also been eliminated here.
- Continued usage of the Release 3.0 process to upgrade from Release 15 up to and including Release 25.

The output from this tool is a file referred to as an “opi file” which is unique to each switch and must be submitted with an upgrade order to verify that existing site history/information is correct and the correct number of Licenses are being provisioned.

Major CVSD Elements

Service Level Licenses are orderable by quantity and by Service Level. They are priced higher for a higher service level. They are the same price for all system types, and they must all be at the same level.

- Analog, CLASS and Digital Users
- IP and Basic IP Users
- ACD Agent Users
- DECT and DECT Visitor Users

System Level Licenses are orderable by quantity. They are the same price for all system types, all service levels.

- ITG ISDN Trunk, H.323 Access Ports and SIP Access Ports
- Personal Call Assistant
- RAN CON and MUSIC CON
- AST
- Survivability

This table summarizes the SW license and CVSD Software service level requirements. It does not mean that the tools will provision these automatically. The tools requirements for each individual product will be driven from the product teams who own the auxiliary products.

Product	S/W License Used	CVSD Service Level Required
Agent Greeting	None	Enhanced Business Service (L2)
CallPilot	None	• Business Services (L1) • Network Message Service option (175) requires Advanced Network Services (L3B)
CallPilot Mini	• Digital User • ACD Agent User	Business Services (L1)
Meridian Mail	None	• Business Services (L1) • Network Message Service option (175) requires Advanced Network Services (L3B)
Core HW	None	Business Services (L1)
ITG Trunks	ITG ISDN Trunks	Enhanced Business Service (L2)
Meridian MAX	None	Advanced Call Center Services (L3A)
MICA	• Digital User • ACD Agent User	Business Services (L1)
MICB	• Digital User • ACD Agent User	• 12 to 32 Port Card =Business Services (L1) • 42 to 62 Port Card =Enhanced Business Services(L2)
MIPCD	• Digital User • ACD Agent User	Business Services (L1)
MIRAN	RAN CON and MUS CON licenses are optional and must be ordered separately if required	Business Services (L1)
MIVS	• Digital User • ACD Agent User	Business Services (L1)
OTM	None	• Business Services (L1) • If DBA (feature package 351) is selected, this will drive the SW to Enhanced Business Services (L2)
SCCS	Note: AST are required	• CCS 100 requires Advanced Call Centre

Product	S/W License Used	CVSD Service Level Required
	if using TAPI	Services (L3A) • CCS 300 requires Premium Network Services (L4)
SECC	Note: AST are required if using TAPI	Advanced Call Centre Services (L3A)
SWCP	Phantom TNs - are set to max and do not need to be ordered	Business Services (L1)
Symposium Agent	None	Business Services (L1)
Symposium TAPI	AST	Advanced Call Center Services (L3A)
Attendant PC	Attendant Consoles- are set to max and do not need to be ordered	Business Services (L1)
M2250 Console	Attendant Consoles- are set to max and do not need to be ordered	Business Services (L1)
M2XXX (Digital Sets) series	Digital User	Business Services (L1)
i2001	Basic IP User (i2001 sets will function with IP user)	Business Services (L1)
i2002	IP User	Business Services (L1)
i2004	IP User	Business Services (L1)
i2050	IP User	Business Services (L1)
Remote Office (9110, 9115, 9150)	Digital User	Business Services (L1)
M3900 Series	Digital User	• 1. Business Services (L1) • Virtual Office requires Enhanced Business Services (L2)
CLASS Phone	CLASS User	Business Services (L1) Note: Do not purchase CLASS licenses if you are running regular analog telephones or your Message Waiting Indication won't function properly. If you will be converting to CLASS sets in the future - then order the analog to CLASS license upgrade (NTE968AA) at the appropriate time.
Companion	DECT user (previously called Wireless)	Business Services (L1)
i2210 / i2211 (802.11)	IP user	Business Services (L1)
Symbol NetVision 802.11 FHSS Portable	Digital User	Business Services (L1)

Product	S/W License Used	CVSD Service Level Required
Telephone Symbol NetVision 802.11b DSSS Portable Telephone		
Wireless IP for EMEA & Asia Pacific only	Digital User	Business Services (L1)
DECT Wireless	• DECT user (previously called Wireless) • DECT Visitor user (DECT only)	• Business Services (L1) • Multi Site option (370) requires Advanced Network Services (L3B)
Analog Terminal Adapter	Digital User - required when data port is used for voice (LD 11 CLS FLXA & VCE)	Business Services (L1)

The Global Product and Pricing Catalogue (GPPC)

GPPC is a web-based application for searching, browsing and downloading Enterprise voice, data and optical product and services regional MSRP, WPP & Partner specific NPP pricing information. Note that registration is required for access to GPPC.

For the Americas, in the same timeframe as the introduction of Communication Server 1000 Release 4.5, the periodicity of the GPPC Catalogue will change. Instead of being available on a per tool release basis, the catalogue is refreshed on a monthly basis and works off 'effective' dates so as to always show the most up-to-date information. GPPC is 100% aligned with NNOC, since NNOC uses GPPC as its real-time catalogue.

For EMEA, APAC and Greater China, GPPC is 100% aligned with the NNEC tools release. GPPC is also 100% aligned with NNOC, since NNOC uses GPPC as its real-time catalogue.

Advance Notification

In the Americas, Contract Primes will be sent a copy of the Advance Notice information each month. This Advance Notice information is also available online on GPPC.

In EMEA, APAC and Greater China, advance notice price books are distributed 30 or 60 days, depending on contractual obligation, in advance of the NNEC tools release. This Advance Notice information is also available online on GPPC.

Emergency Changes

Still published on GPPC with a Pop-Up to inform the user; history is available in Product Content Update Calendar. Notifications will be sent to Contract Primes - format change only.

Download Pricebooks

Download pricebooks will be updated on a monthly basis. File format will include:

- Type change indicator for each item changed since the last month
- Advance Notice tab will all known changes occurring in the next 90 days

Configurable Catalogue Extract Files

Can be created on demand or scheduled for customers who want to update their own systems to align with Nortel's catalogue. There are user selectable data fields from any fields included in GPPC item information. There is a user created email distribution, updated each time extract is run.

PEC to CPC

CPC is not published in Download Pricebooks, but provided as a selectable field in Configurable Catalogue Extracts; it can be combined with any data field included in GPPC.

Registration

Partners can register for GPPC by visiting <http://www.nortel.com/register>

Once registered, Partners can get access to GPPC as follows –

EMEA: <http://www.nortel.com/nnecu>

Americas/APAC/Greater China: <http://www.nortel.com/nnecn>

How do I get more information?

Please visit <http://www.nortel.com/gppc>.

NNEC

What is it?

In our continuing efforts to deliver unparalleled business value to our Partners, Nortel offers many useful tools, including voice configurator tools (Nortel Enterprise Configurator (NNEC)), and tools to assist in upgrades (OrderPro)). Together with the pricing repository, GPPC, the tools are designed to make the effort of quoting Nortel products simpler and more effective.

Key Features of NNEC

- Offered as a stand-alone and web-based tool
- Simple "Needs-Based" questions allow for easy quoting
- Includes administrative functions like Selling Price Admin, End Customer Admin, User Admin, Group Admin, and Tool Tips
- Analyses input specifications
- Performs complex calculations from simplified inputs and displays these in easy to read reports, such as equipment lists, cabling reports, software matrix, XLATE and Bayface layouts.
- Graphically depicts the engineered platform, showing how the shelves are populated with various cards. Also shows loop assignments.
- OrderPro output integration via OPI file upload prompt.
- Allows for displaying of nine pricing levels, depending on channel privileges -- MSRP, WPP, NPP and six selling Prices.

NNEC Functionality

For a complete list of new functionality, please access www.nortel.com/nnecpic Also available are several training sessions and downloadable training material for users.

System Requirements

PC

- Pentium 166MHz
- 32 MB RAM & 100 Meg free space on hard drive
- Windows 95 / 98 / 2000 / Win NT / XP / Mac OS

Application

- Microsoft Explorer 4.0 or Netscape (excluding 4.04)
- Microsoft Office

Network

- External Internet Service Provider (ISP) with analog/digital connection
- High speed access for web version

Nortel Specific requirements

- Access to Nortel (SAM ID)
- Provided if accessing PIC today
- Contract ID from Nortel

- Partial or full accreditation for Voice portfolio

Who is my key Tools contact?

E-mail to citeam@nortel.com, or call 1-800-4NORTEL, ERC 7103

How do I get more information?

Please visit the NNEC information site at www.nortel.com/nneccpic . Training Material and Course availability are covered through this site.

Main site – North America & CALA: <http://www.nortel.com/nneccn>

Registration North America & CALA: <http://www.nortel.com/register>

Main site – EMEA: <http://www.nortel.com/nneccu>

Registration EMEA: Via your Co-Worker Administration prime. If no co-worker administration prime is assigned, then e-mail escpm@nortel.com

General Information: <http://www.nortel.com/nneccpic>

OrderPro

OrderPro is a PC based application that repackages the software on an installed system to the current release of software. OrderPro converts the installed software features to the equivalent Service level in the Customer Value Software Delivery (CVSD) Software Structure and calculates the equivalent software license values based on the hardware and software data extracted from the system.

OrderPro is used to dial into an installed system to capture configuration information from the system. The information gathered is then used to calculate the equivalent software service level in the CVSD software structure and the settings for the software licenses.

An encrypted file with the extension .opi is created in OrderPro and includes the Summary Report information. It is a component of the software upgrade ordering process globally.

For all regions: The OPI file information is uploaded to NNEC to enable the quoting and ordering of software upgrades.

For the Americas (Canada, United States, and CALA): The OPI file is also sent to Nortel, via FTP, the Web or email with each upgrade order. The upgrade keycode is generated based on the values in the OrderPro OPI file.

OrderPro may also be used to create an OPI file for use within NNEC for:

- expansions on CVSD systems
- to auto-populate the site survey in NNEC for small systems and large systems. Refer to 'Limitations of OrderPro' in this chapter for exceptions.

OrderPro generates two reports that contain the new software structure result information, as well as a summary of the configuration information captured from the system. The reports can be viewed, printed and saved as a text file.

Order Pro 6.3.0

OrderPro use continues to be mandatory in NA & CALA for all initial release 25.40 and earlier upgrades to Succession/CS 1000, and has been enabled for upgrades to CS 1000 Release 4.5. Note that OrderPro is not required for Succession 3.0 or later to CS 1000 Release 4.5 upgrades.

When Do I Use OrderPro?

OrderPro must be used for all systems running pre-FBP software (EMEA, AP and GC regions), or Meridian 1 Release 15 through 25.47 software (Americas/CALA regions), upgrading to the CVSD software structure (ie Succession 3.0 or later) for the first time.

OrderPro may also be used to:

- capture the installed software details for expansions of systems already running any release of FBP or CVSD software. This information can be viewed in the OrderPro Summary and Detailed reports.

- for small and large systems, the OrderPro OPI file can be loaded into NNEC to auto-populate the NNEC site survey hardware layout of the system. The OrderPro OPI file can be used to auto-populate the Site Survey for Release 15 and later systems (including systems on FBP and CVSD). Refer to 'Limitations of OrderPro' in this chapter for systems that do not support the Site Survey auto-population.

OrderPro is NOT required for:

- Systems already on FBP or CVSD software that are upgrading to a later release of software or expanding.
- CSE 1000 Release 2.0 systems upgrading to CS 1000 Release 4.5. CSE 1000 systems already use all of the Licenses in the CVSD structure and a bundled software package structure, such that the equivalent Service level and Licenses can be calculated based on the data from order history.
- New Systems

How Do I Download OrderPro?

Go to <http://www.nortel.com/support>

- Select "Log In" from the left side menu.
- You will then be asked to enter your secure Nortel ID and password.
- Your personalized Customer Support Screen will then be presented.
- Select the "Products" hyperlink from the menu options on the left hand side
- From the Alphabetical listing presented, select "O"
- Scroll down the list of products until you find "OrderPro"
- Select "Software"
- Select "Select OrderPro v6.3.x"
- Select File Download: option to download an executable file containing the current version of OrderPro. Download this OrderPro.exe file to your PC.

Orderpro can also be accessed by clicking on the NNEC main menu – this will directly open the Orderpro download site.

How Do I get More Information?

Training, Collaterals and Information @ <http://www.nortel.com/orderpropic>

Documentation

All Communications Server 1000, IP Line, and Optivity Telephony Manager NTPs, User Guides, and Quick Reference Cards for Release 4.5 can be found on the Nortel's Helmsman Express web site by completing the following steps:

1. Go to <http://www.nortel.com>
2. Select **Technical Documentation** located under **Products, Services, and Solutions**.
3. Select **Helmsman Express** located under **Other Resources**.
4. Select the **Meridian 1 and Communication Server 1000** collection.
5. Select any of the following documentation sets located under **Communication Server 1000 and Meridian 1 Systems**:
 - Communication Server 1000 Release 4.5
 - Succession Release Notes (Document updates)
 - IP Line Release 4.5
 - Optivity Telephony Manager Release 2.2

Customers who require a CDROM of the documentation can order the following:

Title	Order Code	Description
Nortel Enterprise Multimedia Documentation CD-ROM	NTLH91AC N0019412	There are two CD's in the package: Nortel Enterprise Multimedia Systems (Disk 1 of 2) Nortel Enterprise Multimedia Applications (Disk 2 of 2)

The tables below provide a complete listing of the Communication Server 1000 Release 4.5 documentation.

Basic Information	
Definition: Includes library navigation; system overview; and new release information documents.	
Library Navigator: Communication Server 1000 Release 4.5	553-3001-000
Feature Listing	553-3001-011
What's New for Communication Server 1000 Release 4.5	553-3001-015
Communication Server 1000M and Meridian 1: Small System Overview	553-3011-010
Communication Server 1000M and Meridian 1: Large System Overview	553-3021-010
Communication Server 1000S: Overview	553-3031-010

Basic Information

Communication Server 1000E: Overview	553-3041-010
--------------------------------------	--------------

Planning and Engineering

Definition: Includes tasks specific to planning, designing, and engineering the network (including the hardware and software); the network management system and internetworking products such as determining the right technology for the network, accessing the network performance requirements, and understanding hardware and software migration impacts; scheduling and ordering; sales application engineering; implementation planning; and traffic/capacity engineering. It also includes card and cabling descriptions.

Communication Server 1000M and Meridian 1: Small System Planning and Engineering	553-3011-120
Communication Server 1000M and Meridian 1: Large System Planning and Engineering	553-3021-120
Communication Server 1000S: Planning and Engineering	553-3031-120
Communication Server 1000E: Planning and Engineering	553-3041-120
Spares Planning	553-3001-153
Equipment Identification	553-3001-154
Product Compatibility	553-3001-156
Data Networking for Voice over IP	553-3001-160
Electronic Switched Network: Signaling and Transmission Guidelines	553-3001-180
Transmission Parameters	553-3001-182
Dialing Plan: Description	553-3001-183
Multifrequency Compelled Signaling: Description, Hardware and Engineering	553-3001-184

Installation and Configuration

Definition: Includes tasks performed during initial hardware and software installation; initial configuration; testing/commissioning of installation, acceptance, and signoff.

Communication Server 1000: System Redundancy	553-3001-307
Communication Server 1000M and Meridian 1: Small System Installation and Configuration	553-3011-210
Communication Server 1000M and Meridian 1: Large System Installation and Configuration	553-3021-210
Communication Server 1000S: Installation and Configuration	553-3031-210
Communication Server 1000E: Installation and Configuration	553-3041-210
ISDN Primary Rate Interface: Installation and Configuration	553-3001-201
Circuit Card: Description and Installation	553-3001-211
Signaling Server: Installation and Configuration	553-3001-212
IP Peer Networking: Installation and Configuration	553-3001-213
Media Gateway 1000B: Installation and Configuration	553-3001-214
ISDN Basic Rate Interface: Installation and Configuration	553-3001-218

Installation and Configuration

Optivity Telephony Manager: Installation and Configuration	553-3001-230
--	--------------

System Administration and Security

Definition: Includes general system administration and security tasks such as creating user accounts and defining and optimizing system security. Includes OTM and Element Manager documents.

System Management	553-3001-300
System Security Management	553-3001-302
Set Based Administration	553-3001-303
Software Input/Output: Administration	553-3001-311
Optivity Telephony Manager: System Administration	553-3001-330
Optivity Telephony Manager: Telemanagement Applications	553-3001-331

Feature Administration; Operations

Definition: Includes tasks associated with feature and/or application installation, configuration, and activation (including telephones, terminals, consoles, etc.). Includes tasks specific to administering the database, generating reports, and related services.

Nortel WLAN IP Telephony: Installation and Configuration	553-3001-304
Features and Services: Book 1 of 3 (A to C)	553-3001-306
Features and Services: Book 2 of 3 (D to M)	553-3001-306
Features and Services: Book 3 of 3 (N to Z)	553-3001-306
Emergency Services Access: Product Description and Administration	553-3001-313
Attendant PC: Description, Installation, and Operation	553-3001-320
Call Detail Recording: Description and Formats	553-3001-350
Automatic Call Distribution: Feature Description	553-3001-351
Office Data Administration System: Description and Engineering	553-3001-352
Hospitality Features: Description and Operation	553-3001-353
Fiber Remote IPE: Description, Installation, and Maintenance	553-3021-354
Carrier Remote IPE: Description, Installation, and Maintenance	553-3021-355
Fiber Remote Multi-IPE Interface: Description, Installation, and Maintenance	553-3021-356
Mini-Carrier Remote: Description, Installation, and Maintenance	553-3001-357
Meridian Integrated Conference Bridge Service Implementation Guide	553-3001-358
Hospitality Integrated Voice Services: Service Implementation Guide	553-3001-359
Integrated Recorded Announcer: Service Implementation Guide	553-3001-360
Nortel Integrated Call Director: Service Implementation Guide	553-3001-361
Integrated Call Assistant: Service Implementation Guide	553-3001-362
IP Trunk: Description, Installation and Operation	553-3001-363
IP Line: Description, Installation, and Operation	553-3001-365
Telephones and Consoles: Description, Installation, and Operation	553-3001-367
ISDN Primary Rate Interface: Features	553-3001-369

Feature Administration; Operations

IP Phones: Description, Installation, and Operation	553-3001-368
DECT: Description, Planning, Installation, and Operation	553-3001-370
DASS2	553-3001-371
DPNSS1	553-3001-372
Basic Network features	553-3001-379
ISDN Basic Rate Interface: Features	553-3001-380

System Messages

Definition: Includes system-generated error messages and traffic information.	
Software Input/Output: System Messages	553-3001-411
Traffic Measurement: Formats and Output	553-3001-450

Fault Management and General Maintenance

Definition: Includes tasks specific to monitoring and optimizing performance measurements and fault data, troubleshooting and correcting faults and alarms, and responding to performance data such as thresholds, operational measurements, and statistics. Includes tasks specific to performing local and remote fixes. Includes input and output error message documents.	
Software Input/Output: Maintenance	553-3001-511
ISDN Primary Rate Interface: Maintenance	553-3001-517
ISDN Basic Rate Interface: Maintenance	553-3001-518
Communication Server 1000M and Meridian 1: Small System Maintenance	553-3011-500
Communication Server 1000M and Meridian 1: Large System Maintenance	553-3021-500
Communication Server 1000S: Maintenance	553-3031-500
Communication Server 1000E: Maintenance	553-3041-500
Simple Network Management Protocol: Maintenance	553-3001-519

Upgrades

Definition: Includes tasks specific to planning, preparing, and performing physical hardware removal and installation, new software version upgrades (includes removal and installation). It also includes configuration and testing.	
Communication Server 1000M and Meridian 1: Small System Upgrade Procedures	553-3011-258
Communication Server 1000M and Meridian 1: Large System Upgrade Procedures Book 1/2/3of 3	553-3021-258
Communication Server 1000S: Upgrade Procedures	553-3031-258
Communication Server 1000E: Upgrade Procedures	553-3041-258

Training

The Americas

Nortel's North American course offerings have been updated to include the Communication Server 1000 Release 4.5 software. Course descriptions, schedules, and other related training information can be viewed online at:

www.get.globalknowledge.com/norteltraining

Global Knowledge is Nortel's premier training partner for North America. Links from the Nortel home page (www.nortel.com) are also available.

Accreditation

The Accreditation Program document specifies training, certifications, service, and lab requirements, among others, that a Channel Partner must meet in order to sell and/or service Communication Server 1000 Release 4.5. The Accreditation Program document can be located in the:

<https://app12.nortelnetworks.com/cgi-bin/partnerPage.cgi?curOid=12460&filename=/programs/accred/index.html>

section of Partner Information Center (PIC) located under Partner Programs.

Certification Requirements

There are currently no certifications available or planned for this product release. The existing Communication Server 4.0 certifications will apply. Certification details for Communication Server 1000 Release 4.0 can be obtained at www.nortel.com/certification. Partners will find the following information on this site:

- Requirements for each certification
- Exam objectives and % of exam
- Sample questions
- Prerequisite knowledge required and recommended training tracks.
- Exam registration information and FAQ's.

Certification & Avail. Date	Required Exams	Target Audience	Exam Time
NCDS Communication Server (CS) Rls. 4.0 – Now available	920-803 – Technology Standards & Protocols for IP Solutions	This designation certifies that the successful candidate can apply an entry level of technical proficiency required to plan, design and/or engineer a solution in support of a customer's business requirements using Nortel products.	920-803 = 90 Minutes
	920-141 Communication Server (CS) Rls. 4.0		920-141 = 90 Minutes

Certification & Avail. Date	Required Exams	Target Audience	Exam Time
NCSS Communication Server (CS) Rls. 4.0 DB Admin	920-803 – Technology Standards & Protocols for I P Solutions 920-324 Communication Server (CS) Rls. 4.0 DB Admin	This designation certifies that the successful candidate can apply an entry level of technical proficiency required to configure, administer, maintain, and troubleshoot a Nortel solution/product.	920-803 = 90 Minutes 920-324 = 90 Minutes
NCSS Communication Server (CS) Rls. 4.0 I&M	920-803 – Technology Standards & Protocols for I P Solutions 920-160 Communication Server (CS) Rls. 4.0 Hardware I&M 920-325 Communication Server (CS) Rls. 4.0 Software I&M	This designation certifies that the successful candidate can apply an entry level of technical proficiency required to install and configure, administer, maintain, and troubleshoot a Nortel solution/product.	920-803 = 90 Minutes 920-160 = 90 Minutes 920-325 = 90 Minutes
NCDE Communication Server Release 4.0	920-804 – Technology Standards and Protocols for Converged Networks 920-450 Communication Server (CS) Rls. 4.0	This designation certifies that the successful candidate can apply an intermediate to advanced level of technical proficiency required to plan, design and/or engineer a solution using multiple Nortel products. It builds upon the specialist level competencies and focuses on advanced solution engineering and may involve multiple products and internetworking functionalities.	920-804 = 150 Minutes 920-450 = 90 Minutes
NCSE (available June 2005)	920-804 – Technology Standards and Protocols for Converged Networks 920-452 Communication Server (CS) Rls. 4.0	This designation certifies that the successful candidate can apply an intermediate to advanced level of technical proficiency required to configure, administer, maintain, and troubleshoot complex Nortel solutions/products. It builds upon the specialist level competencies and focuses on advanced solution support, which may involve multiple products and internetworking functionalities.	920-804 = 150 Minutes 920-452 = TBD Minutes

Pre-requisite Training and Information

The following courses are available to obtain the prerequisite skills and knowledge required for Communication Server 1000 Release 4.5. Completion of the 6300F “What’s New?” course will provide you the knowledge required for Release 4.5. The [Global Knowledge](#) web site provides the objectives of the course, prerequisite knowledge and skills required prior to attending the course, target audience, current cost, and schedule for the following courses.

Pre-Sales

Target Audience	Course Number	Course Name	Estimated Cost	Estimated Time	Estimated First Course Date
Individuals who have experience with Meridian 1 and Communication Server 1000 systems using Release 4.0 software and require knowledge of the new Communication Server 1000 Release 4.5.	6300F	What's New for Nortel Communication Server 1000 Rls 4.5 and More (approximately 6 hrs.)	\$599.00	6 Hours	6/24/05

Post Sales

Target Audience	Course Number	Course Name	Estimated Cost	Estimated Time	Estimated First Course Date
Individuals who have experience with Meridian 1 and Communication Server 1000 systems using Release 4.0 software and require knowledge of the new Communication Server 1000 Release 4.5.	6300F	What's New for Nortel Communication Server 1000 Rls 4.5 and More (approximately 6 hrs.)	\$599.00	6 Hours	6/24/05

Education Offerings

Configuration Tools

Education on the configuration tools (i.e., NNEC, NetFormx, etc) that are compatible with Communication Server 1000 Release 4.5 are available for administrators and users (sales engineers, order management personnel) of these tools. Information on web-based and leader-led sessions is located on Partner Information Center (PIC) in the Product Configuration section located under On-line Ordering.

Pre-Sales

Target Audience	Course Number	Course Name	Estimated Cost	Estimated Time
Anyone coming up to speed on Meridian and or CS1K	0200C/T/W	Nortel Meridian 1 and Communication Server 1000 Fam - CS 1000 Rls 4.0	\$1328	3 Days (or less on self paced)
Engineers new to Meridian and CS1K	0275C	Nortel Meridian 1 PBX and Engineering Fundamentals - Communication Server 1000 Rls 4.0	\$1260	3 Days

Target Audience	Course Number	Course Name	Estimated Cost	Estimated Time
Engineers who works with VoIP products and Integrated Applications	0276C	Nortel Enterprise VoIP and Integrated Products Engineering	\$1999	4 Days
Design & Support Specialists needing fundamentals of VoIP	0365T/W	VoIP Technologies	\$899	12 Hours
Experienced design & support specialists	0368C	Advanced VoIP Technologies for Design and Support	\$1499	3 Days
Experienced Sales Engineer	0378C	Contact Center and Messaging Engineering	\$2750	5 Days
Experienced Sales Engineers	0702T/W	Fundamentals of BARS/NARS Communication Server 1000 Rls 4.0	\$1150	12 Hrs
Experienced Sales Engineers	0787C	Nortel Communication Server 1000 and IP Networking Design - CS Rls 4.0	\$2374	5 Days

Post Sales

Target Audience	Course Number	Course Name	Estimated Cost	Estimated Time
Anyone coming up to speed on Meridian and or CS1K	0200C/T/W	Nortel Meridian 1 and Communication Server 1000 Fam - CS 1000 Rls 4.0	\$1328	3 Days (or less on self paced)
Technicians who install & maintain database of Meridian1 Option 11C	0224C	Nortel Meridian 1 Option 11C Install, Maint, & Database - Communication Server 1000 Rls. 4.0	\$1995	5 Days
Technicians installing & maintaining Meridian1 Large Systems	0263C	Nortel Meridian 1 Large Systems Installation and Maintenance - Communication Server Rls. 4.0	\$4499	10 Days
Technicians requiring basics of bonding & grounding requirements	0296T/W	Bonding and Grounding	\$25	5 Hours
Individuals responsible for installing & maintaining DTI & ISDN PRI	0272C	DTI/PRI Install & Maint - Nortel Meridian 1 & Communication Server 1000 Rls 4.0	\$2310	5 Days
Anyone performing moves, adds, & changes on a fully installed M1 or CS1K system	0301	Stations Moves, Adds, and Changes - Nortel Meridian 1 and Communication Server 1000 Release 4.0	\$1670	4 Days
Anyone requiring knowledge of M1 or CS1K database programming	0302T/W	Nortel Meridian 1 & Communication Server 1000 Database for Technicians - CS 1000 Rls 4.0	\$1799	24 Hours

Target Audience	Course Number	Course Name	Estimated Cost	Estimated Time
Anyone requiring knowledge of M1 or CS1K database programming	0302C	Nortel Meridian 1 & Communication Server 1000 Database for Technicians – CS 1000 Rls 4.0	\$2032	5 Days
Technicians who administer, implement, maintain, & troubleshoot a network requiring BARS/NARS	0315C	BARS/NARS High Performance Networking Communication Server 1000 Rel 4.0	\$5335	10 Days
Design & Support Specialists needing fundamentals of VoIP	0365T/W	VoIP Technologies	\$899	12 Hours
Experienced design & support specialists	0368C	Advanced VoIP Technologies for Design and Support	\$1499	3 Days
MIS Professionals & M1 Engineers implementing VoIP onto existing network	0398C	IP Trunk	\$2495	4 Days
Technicians installing, configuring, administering & troubleshooting Remote Office units & RLC	0391C	Nortel Remote Gateway 9100 Series Configuration, Administration, and Troubleshooting - Rls 1.5	\$2286	3 Days
Technical Personnel implementing VoIP onto existing network	0399C	IP Line and the IP Phones	\$1675	3 Days
Experienced Field Technicians	0701C	Troubleshooting for Nortel Communication Server 1000S and 1000M Systems	\$1799	3 Days
Installation & Maintenance Technicians	0780C	Nortel Communication Server 1000S Installation, Maintenance and Configuration Rel 4.0	\$2495	5 Days
Technicians installing and maintaining Media Gateways 1000B at the Branch Office, Virtual Trunks, ILP Peer Networking for CS1000 Systems	0784C	IP Peer Networking for the Nortel Communication Server 1000 System - Rel 4.0	\$2494	5 Days
Technicians who install and maintain CS1000E	0788C	Nortel Communication Server 1000E Installation, Maintenance and Configuration - Rel 4.0	\$2495	5 Days
Experienced Technicians with IP Line 4.0 & the Meridian1	6322C	IP Line and the Nortel Communication Server 1000M - Rel 4.0	\$1025	2 Days

Asia Pacific

Pre-requisite Training and Information

The following courses are available to obtain the prerequisite skills and knowledge required for Communication Server 1000 Release 4.5. Completion of the 6300F "What's New?" course will provide you the knowledge required for Release 4.5. The <http://www.nortel.com/training> web site provides the objectives of the course, prerequisite knowledge and skills required prior to attending the course, target audience, current cost, and schedule for the following courses.

Pre-Sales

Target Audience	Course Number	Course Name	Estimated Cost	Estimated Time	Estimated First Course Date
Individuals who have experience with Meridian 1 and Communication Server 1000 systems using Release 4.0 software and require knowledge of the new Communication Server 1000 Release 4.5.	6300F	What's New for Nortel Communication Server 1000 RIs 4.5 and More (approximately 6 hrs.)	\$200	6 Hours	9/7/05

Post Sales

Target Audience	Course Number	Course Name	Estimated Cost	Estimated Time	Estimated First Course Date
Individuals who have experience with Meridian 1 and Communication Server 1000 systems using Release 4.0 software and require knowledge of the new Communication Server 1000 Release 4.5.	6300F	What's New for Nortel Communication Server 1000 RIs 4.5 and More (approximately 6 hrs.)	\$200	6 Hours	9/7/05

Pre-Sales

Target Audience	Course Number	Course Name	Estimated Cost	Estimated Time
Anyone coming up to speed on Meridian and or CS1K	0200C	Nortel Meridian 1 and Communication Server 1000 Familiarization Rls 4.5	\$810	2 Days
Engineers new to Meridian and CS1K	0275C	Nortel Meridian 1 PBX and Engineering Fundamentals - Communication Server 1000 Rls 4.5	\$1215	3 Days
Engineers who works with VoIP products and Integrated Applications	0276C	Nortel Enterprise VoIP and Integrated Products Engineering	\$1620	4 Days
Design & Support Specialists needing fundamentals of VoIP	0365C	VoIP Technologies	\$810	2 days
Experienced design & support specialists	0368C	Advanced VoIP Technologies for Design and Support	\$810	2 Days
Experienced Sales Engineer	0378C	Contact Center and Messaging Engineering	\$2025	5 Days
Experienced Sales Engineers	0702T/W	Fundamentals of BARS/NARS Communication Server 1000 Rls 4.5	\$1150	12 Hrs
Experienced Sales Engineers	0787C	Nortel Communication Server 1000 and IP Networking Design - CS Rls 4.5	\$2025	5 Days

Post Sales

Target Audience	Course Number	Course Name	Estimated Cost	Estimated Time
Anyone coming up to speed on Meridian and or CS1K	0200C	Nortel Meridian 1 and Communication Server 1000 Fam - CS 1000 Rls 4.5	\$810	2 Days
Technicians who install & maintain database of Meridian1 Option 11C	0224C	Nortel Meridian 1 Option 11C Install, Maint, & Database - Communication Server 1000 Rls. 4.5	\$810	2 Days
Technicians installing & maintaining Meridian1 Large Systems	0263C	Nortel Meridian 1 Large Systems Installation and Maintenance - Communication Server Rls. 4.5	\$2025	5 Days
Anyone requiring knowledge of M1 or CS1K database programming	0302C	Nortel Meridian 1 & Communication Server 1000 Database for Technicians - CS 1000 Rls 4.5	\$1,215	3 Days
Design & Support Specialists needing fundamentals of VoIP	0365C	VoIP Technologies	\$810	2 days
Experienced design & support	0368C	Advanced VoIP Technologies for Design and Support	\$810	2 Days

Target Audience	Course Number	Course Name	Estimated Cost	Estimated Time
specialists				
MIS Professionals & M1 Engineers implementing VoIP onto existing network	0398C	IP Trunk	\$1,215	3 Days
Technical Personnel implementing VoIP onto existing network	0399C	IP Line and the IP Phones	\$1,215	3 Days
Experienced Field Technicians	0701C	Troubleshooting for Nortel Communication Server 1000S and 1000M Systems	\$1,215	3 Days
Installation & Maintenance Technicians	0780C	Nortel Communication Server 1000S Installation, Maintenance and Configuration Rel 4.5	\$810	2 Days
Technicians installing and maintaining Media Gateways 1000B at the Branch Office, Virtual Trunks, ILP Peer Networking for CS1000 Systems	0784C	IP Peer Networking for the Nortel Communication Server 1000 System - Rel 4.5	\$1,215	3 Days
Technicians who install and maintain CS1000E	0788C	Nortel Communication Server 1000E Installation, Maintenance and Configuration - Rel 4.5	\$2,025	5 Days
Experienced Technicians with IP Line 4.0 & the Meridian1	6322C	IP Line and the Nortel Communication Server 1000M - Rel 4.5	\$810	2 Days

For details on locations, courses dates, course fees, and registration for these courses, or for further information on training courses available from Nortel, Asia Pacific, please contact the Asia Pacific Knowledge Services team on:

Phone: +61-2-8870-5885

Email: mailto:trainasia@nortel.com

To register online or for information on available courses, visit our website:

Web: www.nortel.com/training (see Asia Pacific region)

EMEA

Communication Server 1000 Release 4.5 Training – EMEA

Nortel's EMEA course offerings have been updated to include content introduced with Communication Server 1000 Release 4.5. Current information including course descriptions, schedules, and other related training information can be viewed online at from Nortel home page <http://www.nortel.com/training>

Communication Server 1000 Release 4.5 - Channel Readiness requirements overview

In order to go GA, CS 1000 partners must have sufficient numbers of engineers trained to install and support the product. Channel partners must also have a lab/demo system in place.

Technical Training courses

Curriculum paths and course descriptions can be viewed and booked on the web at:

<http://www.nortel.com/training>

- or by calling Freephone 00800 8008 9009 or +44 (0) 87 0907 9009

- or by sending an e-mail to KnowledgeServicesEMEA@nortel.com

Demo/Lab System:

- Place the order using NNEC.

General

Any questions on any aspect of Channel readiness, please contact your Nortel Account Manager or your Nortel Partner and Product Line Introduction (PPLI) Manager.

Training Delivery Methods

Training is delivered using various methods which include;

- CD-ROM: Self-paced learning delivered on CD-ROM
- Web: Self paced e-learning via recorded streaming web tutorials
- PBT (Paper-Based Training): Self paced workbook delivered on CD-ROM
- Facilitated event: Facilitated e-learning delivered by an instructor in real-time over the web to students at remote locations
- Hands-in event: Facilitated e-learning delivered by an instructor in real-time over the web with remote network access to lab equipment for 'hands-in' lab exercises
- Hands-on event or Class event: Classroom based Instructor-led including any hands-on training delivered at a Nortel training facility or at the Customer site
- PTS (Portable Training Solutions): Mobile training equipment which can provide hands-on practical lab training at a Nortel training facility or at the Customer site

Communication Server 1000 Release 4.5 Course Listing – EMEA

Current Code	Course Description	Type	Audience	Duration
6300F	What's New for Communication Server Release 4.5 and more	Facilitated E-Learning	Installer Administrator	1 day

Current Code	Course Description	Type	Audience	Duration
6946A	What's New for Communication Server Release 4.5 Practical – Hands on ****This course presents the practical exercises which are a follow-up to course 6300F. It is highly recommended that you enrol and attend the 6300F before attempting this course.	Leader Led	Installer Administrator	1 day
6944A	Communication Server 1000S Release 4.5 Installation, Maintenance and Configuration	Leader Led	Installer Administrator	4 days
6922A	Communication Server 1000M Release 4.5 Configuration and Maintenance	Leader Led	Installer Administrator	4 days
6942A	Media Gateway 1000B Release 4.5 Installation and Configuration	Leader Led	Installer Administrator	2 days
6940F	Communication Server 1000E/M/S Release 4.5 Patching	Facilitated E-Learning	Software Distributors	1 day
6607A	Communication Server 1000E RIs. 4.5 Installation, Maintenance and Configuration	Leader Led	Installer Administrator	5 days
6945A	CS 1000E Release 4.5 for CS 1000M/S Engineers Delta	Leader Led	Installer Administrator	4 days
6606F	Communication Server 1000 Release 4.5 Geographic Redundancy	Facilitated E-Learning	Installer Administrator	1 day
6605A	Communication Server 1000E Release 4.5 Hardware Planners Update	Leader Led	Installer	1 day
6924A	Communication Server 1000S/M Release 3 to Release 4.5 Delta	Leader Led	Installer Administrator	2 days

New Order Codes for Communication Server 1000 Release 4.5

The following sections summarize all new order codes being introduced with CS 1000 Release 4.5. Two new software generics are introduced with CS 1000 Release 4.5:

Generic	System Description
3521	Nortel Meridian 1 PBX 61C with CP PIV processor and Nortel CS 1000M SG with CP PIV processor
3621	Nortel Meridian 1 PBX 81C with CP PIV processor and Nortel CS 1000M MG with CP PIV processor and Nortel CS 1000E with CP PIV processor

Software Upgrades to CS 1000 Release 4.5

Customers wishing to upgrade to CS 1000 Release 4.5 can do so by:

1. Enrolling in Software Release Service (SRS), whereby customers purchase the right to all software upgrades over the period defined in the agreement.
2. CS 1000 Release 4.0 customers can upgrade to CS 1000 Release 4.5 by ordering the following new codes:

Engineering Order Code to deliver Release 4.0 to Release 4.5 upgrades

PEC Code	CPC Code	Description
NTE953MN	N0029530	Release 4.0 to Release 4.5 software upgrade Minimum charge
NTE953MX	N0029531	Release 4.0 to Release 4.5 software upgrade Maximum charge
NTE953LL	N0029532	Release 4.0 to Release 4.5 software upgrade like for like per user
NTE969LL	N0029533	CS 1000B Release 4.0 to Release 4.5 software upgrade like for like per user

Functional Order Code to deliver Release 4.0 to Release 4.5 upgrades

PEC Code	CPC Code	Description
NTHN90MN	N0029534	Release 4.0 to Release 4.5 software upgrade Minimum charge
NTHN90MX	N0029535	Release 4.0 to Release 4.5 software upgrade Maximum charge
NTHN90LL	N0029536	Release 4.0 to Release 4.5 software upgrade like for like per user
NTHN91LL	N0029537	CS 1000B Release 4.0 to Release 4.5 software upgrade like for like per user

Note: SRS will use the above codes to deliver the upgrades to SRS registered customers as well.

3. Ordering Like-for-Like, Minimum and Maximum upgrade codes. These upgrade codes are used when upgrading to CS 1000 Release 4.5, for all pre-CVSD/FBP systems, all FBP systems, all Succession 3.0 systems and all Succession 1000 systems that are on release 15 and later software. The existing CS 1000 Release 4.0 like for like upgrade codes will not up-issue for CS 100 Release 4.5. The same order codes will be used, and manufacturing will point to Release 4.5 when it is available.
4. Ordering Pre-Rls 15 upgrade codes. These codes are used when upgrading to CS 1000 Release 4.5 for any system running pre-release 15 software. The existing pre-release 15 codes will not up-issue for CS 100 Release 4.5. The same order codes will be used, and manufacturing will point to Release 4.5 when it is available.

CS 1000 Release 4.5 New Processor Upgrade Codes

Two new processor upgrade codes are introduced to allow processor upgrades to the new CP PIV processor. When ordered these codes change the processor type for a system while leaving the system type itself as it is.

PEC Code	CPC Code	Description	
NTE900PH	N0025283	PBX 61C / 1000M SG processor upgrade to CP PIV	Gen 3521 & Pkg's 227, 228, 286,368
NTE900PJ	N0025284	PBX 81C/1000M MG processor upgrade to CP PIV for FNF only	Gen 3621 & Pkg's 227, 228, 286, 299, 365, 368
NTE900PK	N0028599	1000E processor upgrade to CP PIV	Gen 3621 & Pkg's 227, 228, 286, 299, 368,402,403

Note: CP PIV is supported with FNF platform only, IGS platform must add Fiber Network Fiber functionality to PBX 81C (NTE900PG)

CS 1000 Release 4.5 New System Upgrade Codes

Three new system upgrade codes are introduced to allow processor upgrades to the new CP PIV processor. When ordered these codes change the system type and the processor of the system.

PEC Code	CPC Code	Description	
NTE960DC	N0025286	System Upgrade to : PBX 61C/1000M SG CP PIV	Gen 3521 & Pkg's 227, 228, 286,368
NTE960EC	N0025287	System Upgrade to : PBX 81C/1000M MG CP PIV FNF	Gen 3621 & Pkg's 227, 228, 286, 299, 365,368

Software License Conversions

These codes permit the conversion of software licenses from one type to another on a single system:

Engineering Order Codes to Convert TDM DECT user licenses to IP and Basic IP licenses

PEC Code	CPC Code	Description	Applicable to
NTE968WA	N0025311	Convert 8 DECT to 8 IP User Licenses	Release 3.0 & later
NTE969WA	N0025312	Convert 8 DECT to 8 Basic IP User Licenses	Release 4.0 & later

Functional Codes to Convert TDM DECT user licenses to IP and Basic IP license

PEC Code	CPC Code	Description	Applicable to
NT5Y26AA	N0025313	Convert 8 DECT to 8 IP User Licenses	Release 3.0 & later
NT5Y27AA	N0025314	Convert 8 DECT to 8 Basic IP User Licenses	Release 4.0 & later
NT5Y28AA	N0029739	Convert 8 DECT Visitor to 8 IP User Licenses	Release 4.0 & later
NT5Y29AA	N0029740	Convert 8 DECT Visitor to 8 Basic IP User Licenses	Release 4.0 & later

CS1000 Release 4.5 New Hardware Codes

PEC CODE	CPC CODE	DESCRIPTION
NTHU53AA	N0028641	Communication Server 1000E CP PIV – 0 Line, 0 Trunk
NTHU51AA	N0028627	Communication Server 1000M Single Group CP PIV Base Pkg (AC)
NTHU51DA	N0028629	Communication Server 1000M Single Group CP PIV Base Pkg (DC)
NTHU52AA	N0028630	Communication Server 1000M Multi Group CP PIV Base Pkg (AC)
NTHU52DA	N0028631	Communication Server 1000M Multi Group CP PIV Base Pkg (DC)
NTHU44AA	N0028610	Option 61C Single Group CP PIV Base Package (AC)
NTHU44DA	N0028611	Option 61C Single Group CP PIV Base Package (DC)
NTHU45AA	N0028612	Option 81C Multi Group CP PIV Base Package (AC)
NTHU45DA	N0028614	Option 81C Multi Group CP PIV Base Package (DC)
NTHU46AA	N0028616	Option 61C from 51/51C Upgrade to CP PIV Single Group (AC)
NTHU46DA	N0028617	Option 61C from 51/51C Upgrade to CP PIV Single Group (DC)
NTHU47AA	N0028619	Option 81C from 61/61C CPx Upgrade to CP PIV Multi Group (AC)
NTHU47DA	N0028620	Option 81C from 61/61C CPx Upgrade to CP PIV Multi Group (DC)
NTHU48AA	N0028621	Option 61C CP PIV Single Group Upgrade Package from Cabinet (AC)

PEC CODE	CPC CODE	DESCRIPTION
NTHU48DA	N0028622	Option 61C CP PIV Single Group Upgrade Package from Cabinet (DC)
NTHU49AA	N0028623	Option 81C CP PIV Multi Group Upgrade Package from Cabinet (AC)
NTHU49DA	N0028624	Option 81C CP PIV Multi Group Upgrade Package from Cabinet (DC)
NTHU50AA	N0028625	Cardcage Upgrade to CP PIV (AC)
NTHU50DA	N0028626	Cardcage Upgrade to CP PIV (DC)
NTHU54AA	N0028644	Geographic Standby CS 1000M SG CP PIV Pkg (AC)
NTHU54DA	N0028645	Geographic Standby CS 1000M SG CP PIV Pkg (DC)
NTHU55AA	N0028646	Geographic Standby CS 1000M MG CP PIV Pkg (AC)
NTHU55DA	N0028647	Geographic Standby CS 1000M MG CP PIV Pkg (DC)
NTHU56AA	N0028648	Geographic Standby CS 1000E CP PIV Pkg
NTHU57AA	N0028649	CP PIV.FNF Spares Package

Merchandise Codes

PEC Code	CPC Code	Description
NT4N39AA	A0549211	Call Processor CP PIV Pack with 512MB DDR and On-board Hard Drive
NTDU62BA	N0026105	Communication Server 1000E Call Server CP PIV
NTDU68AA	N0026177	Blank Faceplate Drive Carrier Slot
	N0026096	Blank Faceplate MMDU Slot
	A0884877	64M Compact Flash
	A0548249	512M Compact Flash
	N0005129	1GB Compact Flash

EMEA/Asia Pacific Functional Hardware Codes

PEC Code	CPC Code	Description
NTHN67KA		CP PIV Upgrade from CP PII
NTHN67MA		81C CP PIV/FNF from 61C CP PII
NTHN67NA		81C CP PIV/FNF from 81/81C IGS
NTHN67PA		Drive Carrier Blank Card

Advisements

PEPs

This bulletin outlines the required PEPs for Release 4.50W per the tables below. There will be other **Optional** PEPs available in ESPL which may be required based upon your system configuration. Please contact your Support representative at Nortel to determine which additional PEPs (if any) are required in your network.

We are introducing 4 new categories to improve PEP selection within the ESPL website based on the content provided. The following categories are applicable to all Enterprise Voice products:

GEN	General content (mass deployment) ← Viewable and downloadable
EMG	Emergency content (accelerated mass deployment) ← Viewable and downloadable
ACT	Product Improvement Patches (not chargeable) ← Viewable and downloadable
LTD	Limited content (specific Customer deployment) ← Viewable and downloadable

PEP Dependency Lists:

A Core Dependency List has been included with the software media to include the Mandatory PEPs that are required at the time of the software installation. IT IS IMPORTANT IF PROMPTED TO INSTALL THE DEPENDENCY LIST TO TYPE – YES.

*** See details under Applicable PEPs heading for Call Server PEP requirements (reference MPLR20698 and MPLR20764).**

*It is recommended to download the Dependency Lists available at the time of installation to ensure you have the current PEP listing. All available PEPs categorized as **General or Emergency** status will be provided automatically via the Dependency List zip file and be shown as user-selected PEPs within the issp or mdp issp commands. Other categorized PEPs (ie. **LTD**) can be downloaded as required for your system configuration by choosing them within the DepList Menu **SEARCH** button.

Log in using your ESPL I.D. and password. www.nortel.com/espl

To register for access, go to Contact ESPL Support menu.

- Choose the **Click Here** button at the [X11/X21 Product PEP Dependency Lists/Paks](#) menu under [PEP Dependency Tools](#).
- Select the Release Generic **X21** Release **04** Issue **50W**
- Select List Type: **All List Types**
- Select Machine Type: **SSC, CPT, CPP or PP4 (CP PIV)**
- Click **SUBMIT**

Installing the DepLists to your System:

Refer to the updated **Matrix Dependency List User Guide (issue 2.0)** on the Enterprise Solutions PEP Library (ESPL) for details on the latest improvements introduced for Release 4.5 for

downloading and installing the Dependency List PEPs. All Matrix DepList commands introduced with Release 4.0 via overlay 143 still apply.

Applicable PEPs

The following list of PEPs are required for X21 Release 4.50W systems. This list may not represent the total number of PEPs applicable to this release, and as such previously installed patches may still be required. Not all problems listed are new with X2104.50W, but they were deemed service affecting and as such PEPs are available for download from the ESPL website.

Call Server PEPs:

* Please note that CP P refers to PEPs that apply to both the CP PII and CP PIV.

Patch #	Description	Applicability	ESPL Category Status
MPLR20698	Fix for ASU (Automatic Software Upgrade) failing at 90%	Mandatory to be added at time of software install. SSC Only. * This PEP is provided within the Core DepList for SSC systems only and delivered with the software. It is required at the time of installation only.	LTD - This PEP will be view only on ESPL.
MPLR20702	Incorrect pad values for DTI<->VTRK/IPT tandem call	Mandatory.	GEN
MPLR20708	BUG1500, BUG1501 getting printed during call park	Mandatory.	GEN
MPLR20723	CPP only: CPP timing precision	Mandatory. CP P Only	GEN
MPLR20735	sipNpmFarendNoResponseTimerEv " causes the calls failure during SIP Traffic	Mandatory. CP P Only	GEN
MPLR20764	SYS0133 occurs on upgrades to 4.50W.	Mandatory to be added at time of software install. *This PEP is provided within the Core DepList	LTD - This PEP will be view only on ESPL.

Patch #	Description	Applicability	ESPL Category Status
		via the RIs 4.50W software media (all systems). It is required at the time of installation only.	
MPLR20765	ITG_ASSERT: "ITG_Map:Non-existent removal" message suppressor	Mandatory.	GEN
MPLR20769	CPP Disk Redundancy Test Fail (includes MPLR20332)	Mandatory. CP P Only	GEN
MPLR20771	BERR705 followed by an INI	Mandatory.	GEN
MPLR20772	Intermittent One-Way Speech on TDB calls	Mandatory. CP PIV Only	GEN
MPLR20789	ELAN0025 tcp Write failure reason 70 causes elan to go down	Mandatory. CP P Only	GEN
MPLR20801	CPP midnight switchover fail and lock up harddisk	Mandatory. CP P Only	GEN
MPLR20806	Running time sync cause task re-start in the inactive core	Mandatory. CP PIV Only	GEN
MPLR20811	BUG396 is printed when a 3904 set is moved.	Mandatory.	GEN
MPLR20840	Overlay 135, Stat CPU always show inactive core health equal to zero.	Mandatory. CP P Only	GEN
MPLR20844	Correctly add the reason for reset info (SYS0107) to the report log for CP PII and CP PIV	Mandatory. CP P Only	GEN

Signaling Server PEPs

Patch #	Description	Applicability	ESPL Category Status
MPLR20704	Wrong language assigned to an IP phone after disITPS.	Mandatory.	GEN
MPLR20716	CLID is sent as anonymous from CS 1000 to MCS 5100 vis SIP	Only when interworking with MCS 5100	LTD

Patch #	Description	Applicability	ESPL Category Status
MPLR20732	BERR0705 EXC 0: Exception 14 in Task "tSIPNPM" causes warmstart	Mandatory.	GEN
MPLR20736	tNetTask1): netJobAdd: ring buffer overflow displayed continuously on a SS.	Mandatory.	GEN
MPLR20737	tSIPNPM task goes to suspend state in traffic run	Mandatory.	GEN
MPLR20754	PbxLink does not recover fully after elan cable pulled on call server	Mandatory.	GEN
MPLR20790	Element Manager software file upload gets stuck *** NOTE: "SPECIAL HANDLING" FOR THIS PEP. SEE NOTES SECTION ***	Mandatory.	GEN
MPLR20798	No Pop up between CD2 users and one way pop up between MCS and CD2 users	Only when interworking with MCS 5100	LTD
MPLR20805	1 way or no way speech path between IP sets on CS1000 and MCS users	Mandatory.	GEN
MPLR20853	GateKeeper fails to receive RAS message (ARQ, DRQ, etc.) in high traffic. *** NOTE: SPECIAL HANDLING INSTRUCTIONS. SEE NOTES SECTION FOR DETAILS ***	Mandatory. Patch only required for Gatekeeper	GEN
MPLR20882	sipNpmFarendNoResponseTimerEv " causes the calls failure during SIP Traffic	Mandatory.	GEN
MPLR20884	ELAN0025 tcp Write failure reason 70 causes elan to go down	Mandatory	GEN

IP Line PEPs

Patch #	Description	Applicability	ESPL Category Status
MPLR20778	TDM2CallPilot call over VTRK terminated on the same SMC has Voice delay problems	Mandatory.	GEN

OTM PEPs

Patch #	Description	Applicability
22078SU3	Allows OTM 2.2 to support Release 4.5. Patch to be loaded on OTM Server with OTM SU3	Mandatory.

Technical Advisements

The following section details various late breaking technical advisements that have not made in into the NTPs or may require modification of procedures. Readers are encouraged to read this section in entirety before attempting a software installation or upgrade.

Notes for upgrading IP Phone 2007 or other IP Sets

These steps will apply in the case of any future set introduction as well. The following steps are to be followed.

1. Login to Element Manager
2. Navigate to the *"IP Telephony Firmware Upgrade"* page by selecting *"IP Telephony > Software > Telephony Firmware"* from the navigator.

Retrieve the latest Firmware Currency file from Nortel as follows:

1. From the *"IP Telephony Firmware Upgrade"* page, click on the *"Refresh Currency File"* button. This will load the *"Refresh Currency Information"* page.
2. From the *"Refresh Currency Information"* page, click on the *"Download currency file"* link. This will initiate the retrieval of *"FirmwareCurrency.zip"* from Nortel. Save this file to your desktop.
3. Unzip the contents of *"FirmwareCurrency.zip"* to your desktop. The archive should contain one file, *"currency.xml"*
4. From the *"Refresh Currency Information"* page, click on the *"Browse"* button and locate *"currency.xml"* and press the *"Upload"* button. After the currency file is uploaded, you will be returned to the *"IP Telephony Firmware Upgrade"* page.

The new set type will now be highlighted in the *"Firmware Versions"* table. Retrieve the firmware file for the new set type from Nortel as follows:

1. In the *"IP Telephony Firmware Upgrade"* page, locate the new set type in the *"Firmware Versions"* table.
2. Click on the hyperlink in the *"Latest Firmware Version"* column of the *"Firmware Versions"* table. This will load the *"Download Firmware File"* page.
3. From the *"Download Firmware File"* page, click on the *"Download firmware file"* link. This will initiate the retrieval of an archive containing the desired firmware file from Nortel. Save this file to your desktop.
4. Unzip the contents of this archive to your desktop. The archive should contain one file, with the extension *".bin"*.

5. From the "Download Firmware File" page, click on the "Browse" button and locate firmware file and press the "Upload" button. After the firmware file is uploaded, you will be returned to the "IP Telephony Firmware Upgrade" page.

At this point, the set firmware for the new set type is available for distribution. Select the check box associated with the new set type and press the distribute button in order to proceed.

Loadware File Errors When Upgrading CP PII from CD ROM

When upgrading a CP II system from CD ROM, the following errors may be displayed:

```
INST0012 Unable to open file ""  
  
errNo : 0xc0007  
  
Please press <CR> when ready ...  
  
>Copying "" to "/p/hidir/cnib.db" -  
  
INST0012 Unable to open file ""  
  
errNo : 0xc0007  
  
Please press <CR> when ready ...  
  
>Copying "" to "/p/hidir/cp.db" -  
  
INST0012 Unable to open file ""  
  
errNo : 0xc0007  
  
Please press <CR> when ready ...  
  
>Copying "" to "/p/hidir/ipb.db" -  
  
INST0012 Unable to open file ""
```

These error messages are related to disk access timing, and will not affect the installation. The software will be loaded correctly and these messages can be disregarded.

Personal Directory Backup

Users are advised to backup the PD info off of the signaling server itself or to a floppy disk prior to the cutover. Scheduled PD Backups do not automatically occur when the signaling server is upgraded to release 4.5. To allow an automatic PD Backups, the signaling server must be re-booted after configuration. Once this is done, the scheduled PD backups will occur.

Campus Redundancy & Cisco L2 Switches

Customers using certain Cisco L2 switches may experience problems with the HSP port not coming up after the Cisco L2 switch comes up. Based on the initial investigation, if the HSP port goes down followed by the L2 switch's port down and then the L2 switch comes back the HSP may not come up. While the L2 port comes back up, it takes a while for it to become active. This results in the HSP port trying to establish a connection while the L2 port is not yet active and the HSP fails to come up. On Cisco L2 switches, the spanning tree function is turned on by default, and when the L2 switch is booting up and the ports come up, it takes about 40 second to go through the Blocking, Listening, Learning and Forwarding states. By enabling the *spanning tree port fast* feature on the L2 switch port, which brings up the port to forwarding state very quickly, the port becomes active in less than 10 seconds which allows the HSP port to come up correctly.

Viewing Errors if mkboot.bat Command Fails During Upgrade

The mkboot.bat command is used from windows explorer by double clicking on the file located in D:\0450_WMR.N33\target\p\install directory. A DOS window is opened and the instructions are followed, and a boot disk is created. If a problem creating the disk is encountered (such as a write protected disk) the dos batch file will fail and the DOS window will close before the error message can be read by the user.

This may occur if the bootdisk fails to be created properly due to a handful of possible error conditions (ie. bad media, write protect is set etc). If the bootdisk fails to load in a system, the following steps may be taken to view the error message:

The user must first open a DOS window from the START menu or quick launch bar) and cd firstly to the CDROM drive (enter D:), then cd to the \0450_WMR.N33\target\p\install directory(cd D:\0450_WMR.N33\target\p\install), then execute the mkboot from the command line(D:\0450_WMR.N33\target\p\install\mkboot). If the creation fails then the error message will stay visible to the user.

As viewed from the open DOS window

```
c:>D: <Enter>
```

```
D:>>cd D:\0450_WMR.N33\target\p\install Enter>
```

```
D:\0450_WMR.N33\target\p\install>mkboot <Enter>
```

The mkboot batch file then executes, instructions are followed and the error messages will be viewable.

Transferring PBX Database to OTM

1. Login to the PBX.
2. Perform EDD in LD 43.
3. Copy the backed files to a PCMCIA card.
4. OR Perform manual FTP of the backed up files to the OTM server.

Workaround for Uploading OTM M1 Corporate directory

1. Launch Corporate Directory application in OTM.
2. Invoke the properties for M1 Corporate Directory.
3. Disable the option to automatically upload the report to PBX.
4. Generate the report.
5. Rename the file to CPDIRx.csv, where x is the customer number.
6. FTP the report generated manually to the PBX under the path C:\u\db.
 - a. FTP to the PBX. (ftp xxx.xxx.xxx.xxx, where xxx.xxx.xxx.xxx is the IP of the PBX)
 - b. Change directory to C:\u\db.
 - c. Type mput CPDIRx.csv
 - d. Close the FTP connection when the transfer is complete.

Element Manager Dependencies

The CS1000 Element Manager is available only for systems equipped with at least of one of the following IP Telephony features: IP Sets, H.323 Gatekeeper Access points or SIP Access ports. Proper ISMs must be enabled on at least one of these features for Element Manager to operate.

Configuring IP Line 4.5 Card With OTM

Configure the IPLine 4.5 card through Element Management or CLI. Configuration is possible via OTM as long as the OTM PEP mentioned in the section above has been applied.

Set Based Administrator

(LAPW - SBA) are not converted properly from Release 3.0 & 4.0 to 4.50W. You need to recreate the SBA's in LD17 and do an "EDD CLR".

Adaptive Bandwidth Management and ZQNL (Qos Alarm Threshold)

The ABWM (Adaptive Bandwidth Management) feature relies on the QoS Monitoring feature in order to provide QoS alarms to the ABWM mechanism. The Signaling Server collects the alarms from the clients and gateways and passes them onto the Call Server. The Call Server handles the alarms depending upon the ZQNL threshold (overlay 117). It may be necessary to change the ZQNL threshold in order for the ABWM feature to react to the QoS alarms.

CS1000S Centralized Software Distribution (CSD) to Media Gateways

If a site is running 4.0 or below with a non-default PDT password, CSD will fail after the main cabinet SSC is upgraded to 4.50W. Change the PDT2 password back to default, reboot the main cab SSC and CSD will occur properly to all media gateways. This issue doesn't apply to CS1000E CSD, since the CPP HD is erased as re-partitioning is done for the VxWorks 5.5 upgrade, therefore it will start with default PDT passwords.

Cannot import Node Configuration into Element Manager

Users cannot import Signaling Server or Media Card node files via Element Manager. This impacts the ability to easily add any SS and media card as a new node by importing the node file. Users must manually add a new node via EM by browsing to IP Telephony -> Nodes: Servers, Media Cards -> Configuration web page. Then click New Node to add and supply all server information. Existing nodes are not affected since the data is converted from pre-4.5 database after upgrade.

Disk Drive Partitioning

The Core Disk Drives will be reformatted and repartitioned during the upgrade to 4.50W. The install boot disk does the first portion and then reboots the system again, then goes into the Install Menu.

If a user needs to take the upgraded core back to an earlier release from 4.50W, the following will take place:

- For CPPII, the 4.0 install detects the wrong partitions and will cause the hard drive to be repartitioned correctly for the earlier release.
- For Signaling Server, on the **4.5** CD, there is a utility to repartition the drive to the format of the previous release. You then put in the earlier Signaling Server disk and do the install.
- Small Systems do no repartition the Hard Disk during the upgrade to 4.5

If users should have to fall back to the previous release on the signaling server, the following steps are required:

1. Put the 4.50.25 CD in the CD drive. Reboot SS from CD.
2. Go to Tools menu, select the choice which says preparing the BootRom / BIOS for previous release. You should see a return message.
3. Put the 4.00.55 CD into the drive. Reboot SS from CD.
4. 4.0 SS install program should detect this as a new install, due to older version of VxWorks. Follow the usual procedure to partition / test the drive and then start complete installation

IP Trunk

All releases of IP Trunk are supported with Release 4.5. There is no dependency between Release 4.5 and the IP Trunk software.

OTM 2.2 Support for Release 4.5

For details on OTM 2.2 support for CS 1000 release 4.5 see the following bulletin:
P-2004-0367-Global Rev. 1.

PDT 1 and PDT 2 Passwords Reset to Default When Upgrading to CP P and Signaling Server (Pentium) Processors

On CP P systems and the Signaling Server after upgrading to Release 4.5, PDT passwords are reset to system default values. Once the upgrade is complete, the user can alter the PDT passwords to non-default values and these changes are propagated to all SS and MC when an EDD is issued.

Password Configurations and External Applications

Any user account created in overlay 17 that is destined to be used for external device communications with the CS1000 system (i.e. OTM, Net6) must always be entered in UPPERCASE. After password change, OTM passwords must still be entered in UPPERCASE.

Gatekeeper/NRS Upgrades

The Release 4.5 documentation omitted some crucial steps in upgrades to NRS. These are outlined below:

1. When upgrading your NRS from Release 4.0 to Release 4.5, the user must ensure that the NRS is backed up to an external location or to a floppy where it can be stored, as all data will be wiped out during the upgrade. When the NRS is upgraded to release 4.5, the user can restore the database from the external source.
2. If upgrading from a release 3.0 system to release 4.5, the gatekeeper data must also be backed up externally, as above. When the user has completed the upgrade the following directories must be created on the signaling server before the database can be ftp'd to these directories:

- **Log into the upgraded Signaling Server**
- **Check to make sure that the directory /u/gk and subdirectory /u/gk/database are on the upgraded signaling server, if not**
- **Create the directory and sub directory**
 - /u/gk
 - /u/gk/database

FTP the Release 3.0 database that was backed up to /u/gk/database/ on the Signalling Server. Then the database can be appropriately converted.

SYS0133 Errors During Upgrade

This issue will not occur if the user responds "Yes" when prompted to load the Dependency list (Deplist) during installation. MPLR20764, which fixes this issue is included in the deplist.* Otherwise, see description below:

Customers upgrading to Release 4.50 may see the SYS0133 error message for some of their BCS templates. There was a problem in an earlier release that inserted one too many words in the block.

The problem may be seen when upgrading the database to release 4.5 or higher. A message will be provided that sysload is correcting the database mis-match. The text of the error message is as follows:

Use overlay 20 to print the list of sets using the affected template and then print those sets to ensure that the data is correct. If it is, then LD 43 and perform EDD CLR to accept the changed data. If the data is not correct, disable the sets. They may need to be rebuilt.

To ensure the correctness of the data these steps must be followed.

* Please note that if this PEP is not applied during installation, then installing the PEP after installation will not address the problem, therefore it is not downloadable (Although it can be viewed) from the PEP library.

Documentation Updates

Changes have been made to the regulatory information chapters in the following NTPs:

- Document number 553-3001-365, IP line Description, Installation and Operation: pages 896 to 899 in Appendix D
- Document number 553-3001-357, Mini Carrier Remote Service Implementation guide : pages 139-142 in Appendix B
- Document number 553-3021-355, Carrier Remote IPE, Description, installation and Maintenance guide pages 229 to 233 in Appendix B
- Document number 553-3001-363, IP trunk Description, installation and Maintenance guide: starting from "Electrical Regulatory standards" on page 599 to end of page 605, in appendix C
- Document number 553-3001-359 Hospitality Integrated Voice services - Service Implementation Guide starting from "Electrical Regulatory standards" on pages 125 to page 127 in Appendix A.
- Document number 553-3001-360 Integrated Recorded Announcer - Service Implementation guide starting from "Electrical Regulatory standards" on page 298 to end of page 301, in appendix B

For the updated regulatory information, users should refer to the chapters called "Regulatory information" in the following system level NTPs:

- 553-3011-120 (Communication Server 1000M and Meridian 1: Small System Planning and Engineering)
- 553-3021-120 (Communication Server 1000M and Meridian 1: Large System Planning and Engineering)
- 553-3031-120 (Communication Server 1000S: Planning and Engineering)
- 553-3041-120 (Communication Server 1000E: Planning and Engineering)

CR Advisements

Problem Category	IPALT fails for calls to MCS converged desktop users Ref: Q01194701 PATCH: NONE
Date reported	17-Aug-05
Platform impacted	Call Server
Software reported	4.50
Description of incident	Calls from MCS bridge should be able to alternately route through PSTN when bandwidth is restricted, but they do not.
Impact on system operation	Calls between CS 1000 & MCS will not re-route in situations where bandwidth gets reduced due to QOS issues.
Workaround	None at this time

Problem Category	Loss Plan - Change default Tx pad value in table 15 for WRLS entry on CS Ref: Q01159344 PATCH: NONE
Date reported	20-Jun-05
Platform impacted	Call Server
Software reported	4.50
Description of incident	Please refer to CR Q01140669 for complete details. Digits 1 & 4 from companion sets could not get through TDM to IP conversion when WRLS pads in Table 15 were used. The problem seems to be a high output gain from the Companion card. A 1 dB change on the Tx pad seemed to allow the digits to pass through and the call to be successful. Because of possibly being on the edge, a 3dB change has been approved and should be implemented.
Impact on system operation	If not done, calls from Companion sets to IP will fail if digits 1 & 4 are in the DN.
Workaround	A manual change of the WRLS Tx entry in table 15 from 19 to 16 will allow calls to go through.

Appendix A – Chargeable Service Level Licenses – All Systems

License Mnemonics	New System Default Setting by System Type	Order Increment for New Systems and Expansions	License Ordering Guidelines
Analog User	0 - PBX 11C chas/cab 0 - PBX 61C/81C 0 - 1000S 0 - 1000M chas/cab 0 - 1000M SG/MG 0 - 1000E 0 - MG 1000T (Trunk)	8 - PBX 11C chas/cab 8 - PBX 61C/81C 8 - 1000S 8 - 1000M chas/cab 8 - 1000M HG/SG/MG 8 - 1000E n/a - MG 1000T (Trunk)	** see note below
Class User	0 - PBX 11C chas/cab 0 - PBX 61C/81C 0 - 1000S 0 - 1000M chas/cab 0 - 1000M SG/MG 0 - 1000E 0 - MG 1000T (Trunk)	8 - PBX 11C Chas/Cab 8 - PBX 61C/81C 8 - 1000S 8 - 1000M chas/cab 8 - 1000M HG/SG/MG 8 - 1000E n/a - MG 1000T (Trunk)	CLASS licenses are orderable in EMEA for Rls 4.0 & later. Added the X21 packages for class and will be ordered with NNECC 5.01 (Feb/04) will use existing FBP codes and will use the AP price. ** see note below
Digital User	0 - PBX 11C chas/cab 0 - PBX 61C/81C 0 - 1000S 0 - 1000M chas/cab 0 - 1000M SG/MG 0 - 1000E 0 - MG 1000T (Trunk)	8 - PBX 11C chas/cab 8 - PBX 61C/81C 8 - 1000S 8 - 1000M chas/cab 8 - 1000M HG/SG/MG 8 - 1000E n/a - MG 1000T (Trunk)	Provision 8 for mini CallPilot ** see note below
DECT User	0 - PBX 11C chas/cab 0 - PBX 61C/81C 0 - 1000S 0 - 1000M chas/cab 0 - 1000M SG/MG 0 - 1000E 0 - MG 1000T (Trunk)	8 - PBX 11C chas/cab 8 - PBX 61C/81C 8 - 1000S 8 - 1000M chas/cab 8 - 1000M HG/SG/MG n/a - 1000E 8 - MG 1000T (Trunk)	* see notes below ** see note below Previously called wireless user - changed Rls 4.0
IP User	0 - PBX 11C chas/cab 0 - PBX 61C/81C 0 - 1000S 0 - 1000M chas/cab 0 - 1000M SG/MG 0 - 1000E 3 - MG 1000T (Trunk)	8 - PBX 11C chas/cab 8 - PBX 61C/81C 8 - 1000S 8 - 1000M chas/cab 8 - 1000M HG/SG/MG 8 - 1000E n/a - MG 1000T (Trunk)	** see note below - NTE980BS to be added to all MG 1000T keycodes - In AP & EMEA - 4 IP user license provided under try & buy program
Basic IP User	0 - PBX 11C chas/cab 0 - PBX 61C/81C 0 - 1000S 0 - 1000M chas/cab 0 - 1000M SG/MG 0 - 1000E 0 - MG 1000T (Trunk)	8 - PBX 11C chas/cab 8 - PBX 61C/81C 8 - 1000S 8 - 1000M chas/cab 8 - 1000M HG/SG/MG 8 - 1000E n/a - MG 1000T (Trunk)	New license for Rls 4.0. Provides access to entry-level IP telephones to the limit of the license ** see note below
DECT Visitor User	0 - PBX 11C chas/cab 0 - PBX 61C/81C 0 - 1000S 0 - 1000M chas/cab 0 - 1000M SG/MG 0 - 1000E 0 - MG 1000T (Trunk)	8 - Opt 11C chas/cab 8 - PBX 61C/81C 8 - 1000S 8 - 1000M chas/cab 8 - 1000M HG/SG/MG n/a - 1000E 8 - MG 1000T (Trunk)	This license is only used in EMEA and Asia Pacific Regions ** see note below

License Mnemonics	New System Default Setting by System Type	Order Increment for New Systems and Expansions	License Ordering Guidelines
ACD Agents User	10 - PBX 11C chas/ cab 10 - PBX 61C/81C 10 - 1000S 10 - 1000M chas/ cab 10 - 1000M SG/MG 10 - 1000E 10 - MG 1000T (Trunk)	1 - PBX 11C chas/ cab 1 - PBX 61C/81C 1 - 1000S 1 - 1000M chas/ cab 1 - 1000M HG/SG/MG 1 - 1000E n/a - MG 1000T (Trunk)	10 ACD Agent users will be provisioned for all New system types in all regions. Applicable for any service level ordered. No additional pricing activity price required.

- * For N. America and CALA DECT User license are used for Upgrades, Expansions & Transfers of Companion enabled systems only.
- * The DECT User license is not supported on N. American CS 1000S, CS1000E and Media Gateway 1000B systems
- * N. American and CALA Companion DECT licenses can be moved from an existing pre Rls 3.0 system to the CVSD structure using OrderPro.
- * DECT User Licenses are used in EMEA and Asia PFC to support the DECT Wireless product on all products including Nortel Communication Server 1000S and the Branch Office.
- ** The 1000 M - HG & 51C can only apply incremental licenses to Expansions. New 1000 M - HG & 51C systems are not allowed. This applies to Service, System and Pre Set licenses.

Note: chas = chassis cab = cabinet

Note: HG = half group SG = single group MG = multi group

- *** NTE980BS - N0016295 - 3 IP user licenses for 1000T Serviceability. This code adds 3 IP users for the 1000T for NA/CALA packages. It is a reference only code. No impact to NNEC. SMS will add 3 IP on the 1000T when the keycode is generated. This is being added to the NTE900MB and NTE970MB packages so that Cardinal will add the 3 IP licenses when generating a keycode for a 1000T standalone.

Appendix B – Chargeable System Level Licenses – All Systems

License Mnemonics	New System Default Setting by System Type	Order Increment for New Systems and Expansions	License Ordering Guidelines
Personal Call Assistant	0 – PBX 11C chas/cab 0 – PBX 61C/81C 0 – 1000S 0 – 1000M chas/cab 0 – 1000M SG/MG 0 – 1000 E 0 – MG 1000T (Trunk)	1 – PBX 11C chas/cab 1 – PBX 51C/61C/81C 1 – 1000S 1 – 1000M chas/cab 1 – 1000M HG/SG/MG 1 – 1000 E 1 – MG 1000T (Trunk)	These increments apply to a standalone M1, 1000M, 1000S, 1000E systems PCA is only available on the 1000T to AP/EMEA
ITG ISDN Trunk	0 – PBX 11C chas/cab 0 – PBX 61C/81C 0 – 1000S 0 – 1000M chas/cab 0 – 1000M SG/MG 0 – 1000 E 0 – MG 1000T (Trunk)	8 – PBX 11C chas/cab 8 – PBX 51C/61C/81C n/a – 1000S n/a – 1000M chas/cab n/a – 1000M HG/SG/MG n/a – 1000 E n/a – MG 1000T (Trunk)	* See Notes Below
H323 Access Port	0 – PBX 11C chas/cab 0 – PBX 61C/81C 0 – 1000S 0 – 1000M chas/cab 0 – 1000M SG/MG 0 – 1000 E 0 – MG 1000T (Trunk)	n/a – PBX 11C chas/cab n/a – PBX 51C/61C/81C 1 – 1000S 1 – 1000M chas/cab 1 – 1000M HG/SG/MG 1 – 1000 E 1 – MG 1000T (Trunk)	**Also refer to notes Below
SIP Access Port	0 – PBX 11C chas/cab 0 – PBX 61C/81C 0 – 1000S 0 – 1000M chas/cab 0 – 1000M SG/MG 0 – 1000 E 0 – MG 1000T (Trunk)	n/a – PBX 11C chas/cab n/a – PBX 51C/61C/81C 1 – 1000S 1 – 1000M chas/cab 1 – 1000M HG/SG/MG 1 – 1000 E 1 – MG 1000T (Trunk)	New license for Rls 4.0. Provides SIP Access ports to the limit of the license **Also refer to notes Below
AST license	1 – PBX 11C chas/cab 1 – PBX 61C/81C 1 – 1000S 1 – 1000M chas/cab 1 – 1000M SG/MG 1 – 1000 E 1 – MG 1000T (Trunk)	1 – PBX 11C chas/cab 1 – PBX 51C/61C/81C 1 – 1000S 1 – 1000M chas/cab 1 – 1000M HG/SG/MG 1 – 1000 E n/a – MG 1000T (Trunk)	license controls Nortel & 3rd party applications
RAN CON license	0 – PBX 11C chas/cab 0 – PBX 61C/81C 0 – 1000S 0 – 1000M chas/cab 0 – 1000M SG/MG 0 – 1000 E 0 – MG 1000T (Trunk)	1 – PBX 11C chas/cab 1 – PBX 51C/61C/81C 1 – 1000S 1 – 1000M chas/cab 1 – 1000M HG/SG/MG 1 – 1000 E n/a – MG 1000T (Trunk)	
MUS CON license	0 – PBX 11C chas/cab 0 – PBX 61C/81C 0 – 1000S 0 – 1000M chas/cab 0 – 1000M SG/MG 0 – 1000 E 0 – MG 1000T (Trunk)	1 – PBX 11C chas/cab 1 – PBX 51C/61C/81C 1 – 1000S 1 – 1000M chas/cab 1 – 1000M HG/SG/MG 1 – 1000 E n/a – MG 1000T (Trunk)	

License Mnemonics	New System Default Setting by System Type	Order Increment for New Systems and Expansions	License Ordering Guidelines
Survivability license	0 - PBX 11C chas/cab 0 - PBX 61C/81C 1 - 1000S 0 - 1000M chas/cab 0 - 1000M SG/MG 0 - 1000 E 1 - MG 1000T (Trunk)	1 - PBX 11C chas/cab n/a - PBX 51C/61C/81C 1 - 1000S 1 - 1000M chas/cab n/a - 1000M HG/SG/MG n/a - 1000 E 1 - MG 1000T (Trunk)	
SIP CONVERGED DESKTOPS	0 - PBX 11C chas/cab 0 - PBX 61C/81C 0 - 1000S 0 - 1000M chas/cab 0 - 1000M SG/MG 0 - 1000E 0 - MG 1000T (Trunk)	n/a - Opt 11C chas/cab n/a - PBX 61C/81C 0 - 1000S 0 - 1000M chas/cab 0 - 1000M HG/SG/MG 0 - 1000E n/a - MG 1000T (Trunk)	This license will only be used globally with the introduction of the SS upissue planned for Nov. 2005
SIP CTI TR87	0 - PBX 11C chas/cab 0 - PBX 61C/81C 0 - 1000S 0 - 1000M chas/cab 0 - 1000M SG/MG 0 - 1000E 0 - MG 1000T (Trunk)	n/a - PBX 11C chas/cab n/a - PBX 61C/81C 0 - 1000S 0 - 1000M chas/cab 0 - 1000M HG/SG/MG 0 - 1000E n/a - MG 1000T (Trunk)	This license will only be used globally with the introduction of the SS upissue planned for Nov. 2005

* **ITG ISDN Trunk** can be co-resident in a configuration with Virtual Trunk ports (H323 Access Port and SIP Access Port) for the Communication Server 1000M and 1000M HG/SG/MG systems.

**** Virtual Trunks - H323 Access Ports and SIP Access Ports**

For Asia PFC, N. America and CALA the Communication Server 1000M Cabinet/Chassis is an orderable system type that will provide a signaling server and H323 Access Port and/or SIP Access Port licenses.

In EMEA, the 1000M Cabinet is an orderable system type – the 1000M Chassis is not.

Appendix C – Chargeable Service/System Level Licenses – Media Gateway 1000B (previously Succession Branch Office)

Media Gateway 1000B is sold as a packaged offering to customers where both software and hardware are provided by ordering one product code. The software provided will be Service Level 4 – Premium Network Services. There will be five versions, a unique one for each Region – Asia Pfc., CALA, EMEA, and N. America, and DSN. Software package 390 is unique to Media Gateway 1000B and is only required in Media Gateway 1000B software load. This package should not be present in the Main System/Office.

Media Gateway 1000B customers requiring IP Peer capability must ensure their Main System is operating on at least Service level 2 – Enhanced Business Services. The IP Peer capability, enabled via either the SIP Access Port or H.323 Access Port Licenses, begins at Service Level 2.

8 Media Gateway 1000B licenses are orderable for expanding capability and are highlighted in the table below. These are Analog, Class, Digital Users, DECT Users and DECT Visitors (AP/EMEA only). The Media Gateway 1000B uses the standard license increment codes. Where unique codes are available for Branch office - they are listed in the table below.

The balance of the Branch licenses are set at a default limit and cannot be incremented or decremented - the defaults are shown in the table below with a 0 listed for the increment size.

The i2001 sets provisioned at the Branch are enabled via the IP User or Basic IP user Licenses at the Main Office. In survivable mode, the i2001 sets at the Branch will be enabled via one of the 400 default IP User Licenses defaulted at the Branch.

Media Gateway 1000B Parameters	APAC Defaults	CALA Defaults	EMEA Defaults	NA Defaults	DSN Defaults	Order Increments
TNS	5000	5000	5000	5000	5000	n/a
ACDN	300	300	300	300	300	n/a
AST (association of set with CTI server)	400	400	400	400	400	n/a
LTID	0	0	0	0	0	n/a
RAN_CON	120	120	120	120	120	n/a
RAN RTE	120	120	120	120	120	n/a
MUS_CON	120	120	120	120	120	n/a
BRAND	2	2	2	2	2	n/a
ACD_AGENTS	300	300	300	300	300	n/a
Analog User - NTM487CA	0	0	0	0	0	8
ATTENDANT_CONSOLES	16	16	16	16	16	n/a
BRI_DSL	150	150	150	150	150	n/a
CLASS User - NTM487DA	0	0	0	0	0	8
DATA_PORTS	2500	2500	2500	2500	2500	n/a
Digital User - NTM487AA	0	0	0	0	0	8,
IP User	400	400	400	400	400	n/a
Basic IP User	0	0	0	0	0	n/a

PHANTOM_PORTS	400	400	400	400	400	n/a
DECT User - standard code	0	0	0	0	0	NA/CALA=0 AP/EMEA=8
DECT Visitor (AP/EMEA only)	0	0	0	0	0	NA/CALA=0 AP/EMEA=8
ITG_ISDN_TRUNKS	0	0	0	0	0	n/a
H.323 Access Port - standard code	30	30	30	30	30	1
SIP Access Port - standard code	30	30	30	30	30	1
TRADITIONAL_TRUNKS	120	120	120	120	120	n/a
TMDI_D-CHANNELS	64	64	64	64	64	n/a
SURVIVABILITY	0	0	0	0	0	n/a
Personal Call Assistant - standard code	0	0	0	0	0	1

Appendix D – Managed Packages

Managed packages fall into 3 categories: Optional, Mutually Exclusive, Restricted and Retired. Packages are applied via order codes to regions, countries and system types as required. All of these packages are also applicable to the Branch Office.

Optional Features

There are no changes to the optional packages with Communication Server 1000 Release 4.5.

Mutually Exclusive

There are no changes to the mutually exclusive packages with Communication Server 1000 Release 4.5.

Restricted Features

There are no new restricted packages introduced in Communication Server 1000 Release 4.5.

Retired Features

There are no packages retiring with Communication Server 1000 Release 4.5

Appendix E - Global Minimum License Order Increments for New Systems

1. EMEA/AP New Meridian - PBX 11C cabinet/chassis, PBX 61C & 81C Systems

Service licenses - minimum of 16 Service User Licenses identified below must be ordered of the same type.

Regional Applicability - for all M1 systems except PBX 11C chassis must be 16 Digital User Licenses

EMEA - 16 - Analog, Digital, IP or DECT all levels

If the system is 100% IP and at Service Level 1, then the minimum is 48 IP User Licenses

If the system is 100% IP and at Service Level 2 or higher, then the minimum is 16 IP User Licenses.

Asia PFC - 16 - Analog, Class, Digital, IP or DECT all levels

If the system is 100% IP and at Service Level 1, then the minimum is 48 IP User IP User Licenses.

If the system is 100% IP and at Service Level 2 or higher, then the minimum is 16 IP User Licenses.

System licenses - One of the following Trunk Type must be ordered:

Traditional Trunk i.e.: Digital/Analog – no license required for Traditional Trunks

OR

ITG ISDN Trunk license increment of 8 and the Hardware Pack

2. EMEA/AP New Communication Server 1000S and 1000M System

Service licenses - 16 User Licenses must be ordered

System licenses – One of the following Trunk Type must be ordered

Traditional Trunk i.e.: Digital/Analog – no license required for Traditional Trunks

OR

8 - H323 Access Port Licenses

OR

8 - SIP Access Port Licenses

Hardware for Communication Server 1000S System Only

1 Succession Media Card (SMC) 32 port card

3. EMEA/AP New Communication Server 1000E Systems

Service licenses - 16 IP User Licenses must be ordered at Level 2 or higher.

System licenses – One of the following Trunk Type must be ordered

- 8 - H323 Access Port Licenses
- OR
- 8 - SIP Access Port Licenses

4. EMEA/AP New Media Gateway 1000T (Trunk) Systems

Service licenses – The following Service Level Licenses can be purchased and applied to this systems type when ordered new. No minimum number of users is required on the order. Minimum service level is Level 2.

- DECT User Licenses – minimum Service Level 2.
- DECT Visitor User Licenses – (DECT Visitor minimum Service Level is 3B).

System licenses – One of the following Virtual Trunk types must be ordered

- 8 - H323 Access Port Licenses
- OR
- 8 - SIP Access Port Licenses

Hardware for New Media Gateway 1000T (Trunk) System

- 1 Succession Media Card (SMC) 32 port card
- 1 Digital Trunk Card

5. NA/CALA New Meridian - PBX 11C Cab/Chas, PBX 61C & 81C Systems

Service licenses - minimum of 16 Service User Licenses identified below must be ordered of the same type.

NA/CALA

- | | |
|----------------|--|
| TDM | 16 - Analog, Digital, CLASS or DECT - all levels |
| 100% IP | 48 - IP User Licenses must be ordered if Level 1 |
| 100% IP | 16 - IP User Licenses must be ordered if Level 2 or higher |

System licenses - One of the following Trunk Type must be ordered.

- Traditional Trunk i.e.: Digital/Analog – no license required for Traditional Trunks
- OR
- ITG ISDN Trunk license increment of 8 and the Hardware Pack

6. NA/CALA New Communication Server 1000S and 1000M Systems

Service licenses – minimum of 16 IP User Licenses must be ordered.

- 48 – IP User Licenses must be ordered if Level 1
- 16 – IP User Licenses must be ordered if Level 2 or higher

System licenses – One of the following Trunk Type must be ordered

- Traditional Trunk i.e.: Digital/Analog – no license required for Traditional Trunks
- OR
- 8 - H323 Access Port Licenses
- OR
- 8 - SIP Access Port Licenses

Hardware for Communication Server 1000S Systems Only

- 1 Succession Media Card (SMC) 32 port card

Note: Cardinal will not enforce HW order rules.

7. NA/CALA New Communication Server 1000E Systems

Service licenses – minimum of 16 IP User Licenses must be ordered.

- 48 – IP User Licenses must be ordered if Level 1
- 16 – IP User Licenses must be ordered if Level 2 or higher

System licenses – One of the following Trunk Type must be ordered

- 8 - H323 Access Port Licenses
- OR
- 8 - SIP Access Port Licenses

8. NA/CALA New Media Gateway 1000T (Trunk) Systems

Service licenses – No minimum number of users is required on the order. When Service Level Licenses are purchased for the SIP / H.323 Media Gateway they must be at Service Level 2.

System licenses – One of the following Virtual Trunk types must be ordered

- 8 - H323 Access Port Licenses
- OR
- 8 - SIP Access Port Licenses

Hardware for Media Gateway 1000T (Trunk) System

- 1 Succession Media Card (SMC) 32 port card
- 1 Digital Trunk Card

Note: Cardinal will not enforce HW order rules.

Appendix F - X11/X21 Retired Software Feature Packages

Retired Feature Packages not used commercially in any market globally. Note that there have been no changes to this table in Release 4.5.

Package	Mnemonic	Description	
3	AIOD	Auto-Ident. of Outgoing Calls	
6	CLNK	CDR on Data Link	n/a
15	RPE1.5	1.5 Mbit Remote Peripheral Equipment - Retired with CS 1000 RIs 4.0	
30	CMAC	Network Comm. Mgmt Center Interface	
31	MCDR	Mini CDR	
66	SCC	SL-1 TDET Special Common Carrier	
78	AMP	Automated Modem Pooling	5
82	RESDB	Resident Debug	9.30A
84	ATM	Automatic Trunk Maintenance Retired- with Succession 3.0	9.30A
85	CSLA	CSL with Alpha Signaling	8
94	JTDS	Japan specific	9.30A
96	SLST	Meridian SL-1 ST	9.30A
112	NKL	Notification Key Lamp	14.41D
130	NIL PTR	Pkg not in use	
136 Not Retired	Moved to	Default Level 1 Japan Large system only	
142	AHLD	Pkg was defined as "AHLD" but never used	
165	RPE2	2.0 Mbit Remote Peripheral Equipment - Retired with CS 1000 RIs 4.0	
166	HOSP	Hospital Management	
168	TMON	Traffic Monitoring	
176	DTOT	DID to Tie	16.87G
177		Pkg not used	15.56F
230	MDP	Manufactured Delivered Patches	20.06
257	EQA	32, (for FCC) discontinued 20.19B	20.06A
264	MLMS BRZ	Brazilian	20.06A
265	MLMS PRC	Mainland Chinese - PRC	20.06A
266	MLMS ROC	Taiwan Chinese	20.06A
267	MLMS DAN	Danish	20.06A
268	MLMS DUT	Dutch	20.06A
269	MLMS FIN	Finish	20.06A
270	MLMS FRC	French Canadian	20.06A
271	MLMS FRE	Euro French	20.06A
272	MLMS GER	German	20.06A
273	MLMS ITL	Italian	20.06A
274	MLMS JPN	Japanese	20.06A

Package	Mnemonic	Description	
275	MLMS KOR	Korean	20.06A
276	MLMSNRW	Norwegian	20.06A
277	MLMS RUS	Russian	20.06A
278	MLMS SPE	Euro Spanish	20.06A
279	MLMSLASP	Latin American Spanish	20.06A
280	MLMS SWE	Swedish	20.06A
281	ZPAG	not introduced	25.0x
293	TAT	Trunk Anti-Tromboning	21.32C
302	MOSR	Mobility Server	22.08A
303	MMO	Mobility Microcellular	22.08A
314	MMSN	Mobility Multisite Network	22.08A
344	GCM	German - Call Monitoring SORM	24.04A
345	UWIN	Universal Wireless Interactive Networking	24.04A
346	SMS	never used/not available	24.04A
352	MMCS	never used/not available	24.04A
371	KAP_AUT	Kapsh side stream - Austria	
372	KAP_CR	Kapsh side stream - CZ/SK	
373	KAP_HUNG	Kapsh side stream - Hungary	
374	KAP_PL	Kapsh side stream - Poland	
375	KAP_CIS	Kapsh side stream - CIS	
376	KAP_ACD	Kapsh side stream - ACD	
383	R25 Lite	R25 Lite-Restricted, Not used after 25.08	25.07W 24C

Appendix G – Service Level Content

Asia Pacific Region

The features in the table below are included automatically in the appropriate service level for ALL machine types and ALL countries in the region when the Service licenses for the service level are ordered for New Systems.

Level 4	Premium Network Services	NTE935AC – N0033385
207, 321		
Level 3A Advanced Call Center Services NTE933AC – N0033393	Level 3B Advanced Network Services NTE934AC – N0033390	
50, 114, 155, 225, 297, 311, 388	38, 39, 62, 67, 159, 175, 183, 188, 192, 219, 231, 305, 313, 316, 335, 348, 370	
Level 2	Enhanced Business Service	NTE932AC – N0033394
2, 37, 42, 43, 60, 63, 86, 116, 118, 123, 147, 148, 149, 152, 172, 178 209, 263, 306, 307, 309, 312, 351, 382, 387, 394, 399, 401, 406, 407		
Level 1	Business Services	NTE931AC – N0033396
0, 1, 4, 5, 7, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19, 20, 21, 23, 24, 25, 28, 29, 32, 33, 34, 35, 36, 40, 41, 44, 45, 46, 47, 48, 49, 51, 52, 53, 54, 55, 56, 58, 59, 61, 64, 70, 71, 72, 73, 74, 75, 76, 77, 79, 80, 81, 83, 87, 88, 89, 90, 91, 92, 93, 95, 98, 99, 100, 101, 102, 103, 104, 105, 107, 108, 109, 110, 111, 113, 115, 117, 119, 120, 122, 124, 125, 127, 128, 129, 132, 133, 134, 137, 138, 139, 140, 141, 144, 145, 146, 150, 151, 153, 154, 157, 160, 161, 162, 163, 164, 167, 169, 170, 173, 174, 179, 180, 181, 182, 184, 185, 186, 187, 191, 193, 195, 198, 202, 203, 204, 205, 206, 208, 210, 211, 212, 214, 215, 216, 218, 222, 229, 233, 234, 235, 236, 240, 242, 243, 245, 246, 247, 250, 251, 253, 254, 255, 256, 258, 259, 261, 283, 289, 294, 296, 301, 308, 310, 315, 323, 324, 327, 328, 332, 333, 347, 349, 350, 362, 364, 380, 381, 384, 386, 389, 397, 398, 400		

DEFAULT FEATURES FOR ASIA PACIFIC

The following features will automatically be added to New System keycodes when the conditions are met:

200 & 295	<u>for all countries</u> – in Level 1 – for all PBX 11C, CS 1000M chassis/cabinet, CS 1000S and Media Gateway 1000T
227, 228, 286, & 368:	<u>for all countries</u> – in Level 1 – for all PBX 61C & CS 1000M SG
227, 228, 286, 368, 365 & 299	<u>for all countries</u> – in Level 1 for all PBX 81C & CS 1000M MG
227, 228, 286, 299 & 368	<u>for all countries</u> – in Level 1 for CS 1000E
65 TDET	<u>for all countries</u> in AP in L1 for all large systems 61C, 81C, 1000M SG/MG

97	JCO	<u>for Japan</u> – in Level 1 for all large and small systems
121	SCMP	<u>for Japan</u> – in Level 1 for all system types
136	JDMI	<u>for Japan</u> – in Level 1 for large systems only
171	JTDS	<u>for Japan</u> – in Level 1 for all large and small systems
126, 285 & 292		<u>for China</u> – in L1 for all large and small systems
OPCB, CHINA, CHTL		
288	DPNSS-ES	<u>for AP and China</u> (is na for Japan) – in Level 3b for all system types
131	SUPP	<u>for AP and China</u> – in Level 1 for all system types
284	DPNSS 1891	<u>for AP and China</u> (is na for Japan) – in Level 3b for all system types
325	DMWI	<u>for AP and China (is na for Japan)</u> – in Level 4 for all system types
402 & 403		<u>for all countries</u> – in Level 2 for CS 1000E
SOFTSWITCH & IPMG		
404	GRPRIM	<u>for all countries</u> – in Level 2 for CS 1000E & CPP provisioned CS 1000M SG, MG

OPTIONAL FEATURES FOR ASIA PACIFIC

The following features will be added New Systems when the Order Code for the feature is ordered.

22	DISA	<u>for all countries in AP</u> - can be added to any level for any system types
57	BARS	<u>for all countries in AP</u> - can be added to any level for any system types
121	SCMP	<u>for AP & China</u> – can be added to any level for any system type
131	SUPP	<u>for Japan only</u> – can be added to any level for any system type
393	UUI	<u>for India only</u> , large systems only at L3A & L4
158	FGD	<u>for India only</u> , large systems only at L4.
405	GRSEC NT5Y19BA	<u>for all countries in AP</u> – can be added to Level 2 for CS 1000E & CPP provisioned CS 1000M SG, MG Will add feature 405 and remove feature 404 Provisioned CS 1000M SG/MG systems - 404 will be removed form the system
404	GRPRIM NT5Y19EA	<u>for all countries in AP</u> - will add feature 404 and remove feature 405 for CS 1000E & CPP provisioned CS 1000M SG, MG.

223, 291, 334, 385
N.A. Trunk Package for India only, large systems only at L3A and L4

* Feature 37 moved to L2 from L3b on CS 1000 Rls 4.0

** Features are selected in NNEC, codes are not provisioned in AP/EMEA for Optional features - the feature option is added to the Xlate for inclusion in the keycode.

CALA Region

The features in the table below are included automatically in the appropriate service level for ALL machine types and ALL countries in the region when the Service licenses for the service level are ordered for New Systems.

Level 4 Premium Network Services NTE925AC – N0033397 207, 321, 325	
Level 3A Advanced Call Center Services NTE923AC – N0033401 1. 50, 114, 155, 224, 225, 249, 297, 311, 388, 393	Level 3B Advanced Network Services NTE924AB – N0033399 38, 39, 62, 67, 158, 159, 175, 183, 188, 192, 219, 231, 262, 284, 288, 305, 316, 348
Level 2 Enhanced Business Services NTE922AC – N0033402 2, 26, 27, 37*, 42, 43, 60, 63, 86, 116, 118, 123, 147, 148, 149, 152, 172, 178 209, 263, 306, 307, 309, 312, 331, 334, 351, 367, 382, 385, 387, 394, 399, 401, 406, 407	
Level 1 Business Services NTE921AC – N0033404 0, 1, 4, 5, 7, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19, 20, 21, 23, 24, 25, 28, 29, 32, 33, 34, 35, 36, 40, 41, 44, 45, 46, 47, 48, 49, 51, 52, 53, 54, 55, 56, 58, 59, 61, 64, 70, 71, 72, 73, 74, 75, 76, 77, 79, 80, 81, 83, 87, 88, 89, 90, 91, 92, 93, 95, 98, 99, 100, 101, 102, 103, 104, 105, 107, 108, 109, 110, 111, 113, 115, 117, 119, 120, 122, 124, 125, 126, 127, 128, 129, 131, 132, 133, 134, 135, 137, 138, 139, 140, 141, 143, 144, 145, 146, 150, 151, 153, 154, 157, 160, 161, 162, 163, 164, 167, 169, 170, 173, 174, 179, 180, 181, 182, 184, 185, 186, 187, 189, 191, 193, 195, 196, 198, 202, 203, 204, 205, 206, 208, 210, 211, 212, 214, 215, 216, 218, 222, 223, 229, 232, 233, 234, 235, 236, 240, 242, 243, 245, 246, 247, 250, 251, 253, 254, 256, 258, 259, 261, 283, 289, 290, 291, 294, 296, 301, 308, 310, 315, 323, 324, 327, 328, 329, 330, 332, 333, 350, 362, 364, 380, 381, 384, 386, 389, 397, 398, 400	

DEFAULT FEATURES FOR CALA: the following features will automatically be added to New System Keycodes when the conditions are met:

65 TDET	<u>for all countries in CALA</u> – added to Level 1 for all Large Systems
200 & 295 chassis/cabinet,	<u>for all countries in CALA</u> – in Level 1– for all PBX 11C, CS 1000M
	CS 1000S and Media Gateway 1000T
227, 228, 286, & 368	<u>for all countries in CALA</u> – in Level 1 – for all PBX 61C & CS 1000M SG
227, 228, 286, 368, 365 & 299	<u>for all countries in CALA</u> – in Level 1 for all PBX 81C & CS 1000M MG
227, 228, 286, 299 & 368	<u>for all countries in CALA</u> – in Level 1 for CS 1000E
402 & 403	<u>for all countries in CALA</u> – in Level 2 for CS 1000E

for all countries in CALA – in Level 2 for CS 1000E & CPP provisioned PBX

81C & CS 1000M SG, MG

22	DISA	NTE95002 - A0511884	<u>for all countries in CALA</u> - can be added to any level for any system type
57	BARS	NTE95006 - A0511932	<u>for all countries in CALA</u> - can be added to any level for any system type
197	FTA	NTE95018 - A0511945	<u>for all countries in CALA</u> - any system level for any system type
248	MPH	NTE95034 - A0517114	<u>for all countries in CALA</u> - any level for Large Systems, except CS 1000E
405	GRSEC	NTE980KS - A0553861	<u>for all countries in CALA</u> - can be added to Level 2 for CS 1000E & CPP
			provisioned CS 1000M SG, MG systems - will add feature 405 and remove feature 404
404	GRPRIMNTE960KA		<u>for all countries in CALA</u> - will add feature 404 and remove feature 405

Page 101 of 135

EMEA Region

The features in the table below are included automatically in the appropriate service level for ALL machine types and ALL countries in the region when the Service licenses for the service level are ordered for New Systems.

Level 4 Premium Network Services NTE945AC – N0033406 207, 321, 325.	
Level 3A Advanced Call Center Services NTE943AC – N0033408 50, 114, 155, 225, 297, 311, 388 2.	Level 3B Advanced Network Services NTE944AC – N0033407 38, 39, 62, 67, 159, 175, 183, 188, 192, 231, 262, 288, 305, 316, 348, 370

Level 2 Enhanced Business Services NTE942AC – N0033410 2, 37*, 42, 43, 60, 63, 86, 116, 118, 123, 147, 148, 149, 152, 172, 178 209, 263, 306, 307, 309, 312, 331, 351, 367, 382, 387, 394, 399, 401, 406, 407
--

Level 1 Business Services NTE941AC – N0033411 0, 1, 4, 5, 7, 8, 9, 10, 11, 14, 16, 17, 18, 19, 20, 21, 23, 24, 25, 28, 29, 32, 33, 34, 35, 36, 40, 41, 44, 45, 46, 47, 48, 49, 51, 52, 53, 54, 55, 56, 58, 59, 61, 64, 70, 71, 72, 73, 74, 75, 76, 77, 79, 80, 81, 83, 87, 88, 89, 90, 91, 92, 93, 95, 98, 99, 100, 101, 102, 103, 104, 107, 108, 109, 110, 111, 113, 115, 119, 120, 122, 124, 125, 127, 128, 129, 131, 132, 133, 134, 137, 138, 139, 140, 141, 143, 144, 145, 146, 150, 151, 153, 154, 157, 160, 161, 162, 163, 164, 167, 169, 170, 173, 174, 179, 180, 181, 182, 184, 185, 187, 191, 193, 196, 198, 202, 203, 204, 205, 206, 208, 210, 211, 212, 214, 215, 216, 218, 222, 229, 233, 234, 235, 236, 240, 242, 243, 245, 246, 247, 250, 251, 253, 254, 256, 258, 259, 261, 283, 289, 296, 301, 315, 323, 324, 327, 328, 329, 330, 332, 333, 350, 362, 364, 366, 380, 381, 384, 386, 389, 397, 398, 400

DEFAULT FEATURES FOR EMEA – the following features will automatically be added to New System or keycodes when the conditions are met:

200 & 295	<u>for all countries</u> – in Level 1 for all PBX 11C/CS 1000M chas/cab, CS 1000S & Media Gateway 1000T
227, 228, 286, & 368	<u>for all countries</u> – in Level 1 – for all PBX 61C & CS 1000M SG
227, 228, 286, 368, 365 & 299	<u>for all countries</u> – in Level 1 for all PBX 81C & CS 1000M MG
227, 228, 286, 299 & 368	<u>for all countries</u> – in Level 1 for CS 1000E
402 & 403	<u>for all countries</u> – in Level 2 for CS 1000E
404	<u>for all countries</u> – in Level 2 for CS 1000E & CPP provisioned PBX 61C, 81C &
	CS 1000M SG/MG
135 MFE	<u>for France</u> – in Level 1 for any system type.

186	POVR	<u>for Tele Denmark, Finland and Schrack Poland</u> – in Level 1 for any system type.
190	UK	<u>for UK BT and UK Other</u> – in Level 1 for any system type.
197	FTA	<u>for Schrack Poland and France</u> – in Level 1 for all System types
221	CIST	<u>for Turkey and CIS</u> – in Level 1 for any system type.
232	PEDM	<u>for Schrack Poland and France</u> - in Level 1 for Large Systems
252	KD3	<u>for Spain and Portugal</u> – in Level 1 for any system type.
326 & 221	CISMFS	<u>for CIS</u> - in Level 1 for any system type.

OPTIONAL FEATURES FOR EMEA – the following features will be added New Systems when the Order Code for the feature is ordered.

22	DISA	<u>for all countries in EMEA</u> - can be added to any level for any system type
57	BARS	<u>for all countries in EMEA except Schrack Damova Poland</u> - can be added to any level for any system type
186	POVR	<u>any country other than Denmark/Finland/Poland</u> -any level any system type
221	CIST	<u>for Finland & Poland</u> – add to any level for any system type.
284	DPNSS	<u>for all countries in EMEA</u> -can be added to L3b or higher for any system type
304	ARDL	<u>for Israel</u> – can be added to any level for any system type
353	SORM	<u>for CIS</u> – can be added to any level for PBX 11C, 61C and 81C only
	11C-NTFZ39AB	
	51C- NTFZ39BA	
	61C- NTFZ39CA	
	81C- NTFZ39DA	
405	GRSEC	<u>for all countries in EMEA</u> – can be added to Level 2 for CS 1000E & CPP.
	NT5Y19BA	
	Will add	feature 405 and remove feature 404
404	GRPRIM	<u>for all countries in EMEA</u> – will add feature 404 and remove feature 405
	NT5Y19EA	
395	M3900Med	<u>for Israel</u> - can be added to any level for any system type
396 & 304	M3900 RGA	<u>for Israel</u> - can be added to any level for any system type
		provisioned CS 1000M
326&221	CISMFS	<u>for Turkey, Finland, Poland</u> – add to any level for any system type.

* Feature 37 moved to L2 from L3b on CS 1000 RIs 4.0

** Features are selected in NNEC, codes are not provisioned in AP/EMEA for Optional features - the feature option is added to the Xlate for inclusion in the keycode.

North American Region

The features in the table below are included automatically in the appropriate service level for ALL machine types and ALL countries in the region when the Service licenses for the service level are ordered for New Systems.

Level 4	Premium Network Services	NTE915AC – N0033412
207, 321		
Level 3A Advanced Call Center Services NTE913AC – N0033415	Level 3B Advanced Network Services NTE914AC – N0033414	
50, 114, 155, 224, 225, 249, 297, 311, 388, 393 3.	38, 39, 62, 67, 158, 159, 175, 183, 192, 219, 305, 316, 348	
Level 2	Enhanced Business Services	NTE912AC – N0033416
2, 26, 27, 37*, 42, 43, 60, 63, 86, 116, 118, 147, 148, 149, 152, 172, 178 209, 263, 306, 307, 312, 331, 334, 351, 382, 385, 387, 394, 399, 401, 406, 407		
Level 1	Business Services	NTE911AC – N0033417
0, 1, 4, 5, 7, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19, 20, 21, 23, 24, 25, 28, 29, 32, 33, 34, 35, 36, 40, 41, 44, 45, 46, 47, 48, 49, 51, 52, 53, 54, 55, 56, 58, 59, 61, 64, 70, 71, 72, 73, 74, 75, 76, 77, 79, 80, 81, 83, 87, 88, 89, 90, 91, 92, 93, 95, 98, 99, 100, 101, 102, 103, 105, 107, 108, 109, 110, 111, 113, 115, 117, 119, 120, 121, 125, 127, 129, 132, 133, 139, 140, 141, 145, 146, 150, 151, 153, 154, 157, 160, 161, 162, 163, 164, 167, 170, 173, 174, 179, 180, 181, 184, 185, 186, 191, 202, 203, 204, 205, 206, 208, 210, 212, 214, 215, 216, 218, 222, 223, 229, 233, 234, 235, 240, 242, 243, 245, 246, 247, 250, 251, 253, 254, 256, 258, 259, 291, 296, 301, 310, 315, 324, 327, 328, 329, 330, 332, 333, 350, 362, 364, 380, 381, 384, 386, 397, 398, 400		

DEFAULT FEATURES FOR NORTH AMERICA– the following features will automatically be added to New System or keycodes when the conditions are met:

65	TDET	<u>for all countries</u> – in Level 1 for Large Systems only
200 & 295		<u>for all countries</u> – in Level 1– for all PBX 11C, CS 1000M chassis/cabinet, CS1000S and Media Gateway 1000T
227, 228, 286, & 368		<u>for all countries</u> – in Level 1 – for all PBX 61C & CS 1000M SG
227, 228, 286, 368, 365 & 299		<u>for all countries</u> – in Level 1 for all PBX 81C & CS 1000M MG
227, 228, 286, 299 & 368		<u>for all countries</u> – in Level 1 for CS 1000E
402 & 403		<u>for all countries</u> – in Level 2 for CS 1000E
404		<u>for all countries</u> – in Level 2 for CS 1000E & CPP provisioned PBX 61C, 81C
&		CS 1000M SG/MG

OPTIONAL FEATURES FOR NORTH AMERICA – the following features will be added to the upgrade keycode automatically if the system upgrading has the feature in LD22 or on New Systems if the Order Code for the feature is ordered.

- 22** DISA NTE95002 - A0511884 for all countries - can be added to any level for any system type
- 57** BARS NTE95006 - A0511932 for all countries can be added to any level for any system type
- 248** MPH NTE95034 - A0517114 for all countries in N.A. - any level for Large Systems, except CS 1000E
- 405** GRSEC NTE980KS - A0553861 for all countries in N.A. - can be added to Level 2 for CS 1000E & CPP provisioned CS 1000M SG/MG systems. Will add feature 405 and remove feature 404
- 404** GRPRIMNTE960KA for all countries in N.A. – will add feature 404 and remove feature 405

* Feature 37 moved to L2 from L3b on CS 1000 RIs 4.0

Appendix H Media Gateway 1000B Software Content

Asia Pacific

The features in the table below are included automatically in the Premium Service Level (L4) for Media Gateway 1000Bs in ALL countries in the region. (Package 407 is not applicable to 1000B)

0, 1, 2, 4, 5, 7, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19, 20, 21, 23, 24, 25, 28, 29, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 58, 59, 60, 61, 62, 63, 64, 67, 70, 71, 72, 73, 74, 75, 76, 77, 79, 80, 81, 83, 86, 87, 88, 89, 90, 91, 92, 93, 95, 98, 99, 100, 101, 102, 103, 104, 105, 107, 108, 109, 110, 111, 113, 114, 115, 116, 117, 118, 119, 120, 122, 123, 124, 125, 127, 128, 129, 132, 133, 134, 137, 138, 139, 140, 141, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 157, 159, 160, 161, 162, 163, 164, 167, 169, 170, 172, 173, 174, 175, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 191, 192, 193, 195, 198, 200, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 214, 215, 216, 218, 219, 222, 225, 229, 231, 233, 234, 235, 236, 240, 242, 243, 245, 246, 247, 250, 251, 253, 254, 255, 256, 258, 259, 261, 263, 283, 289, 294, 295, 296, 297, 301, 305, 306, 307, 308, 309, 310, 311, 312, 313, 315, 316, 321, 323, 324, 327, 328, 332, 333, 335, 347, 348, 349, 350, 351, 362, 364, 370, 380, 381, 382, 384, 386, 387, 388, 389, 390, 394, 397, 398, 399, 400, 401, 406,

DEFAULT FEATURES FOR AP Media Gateway 1000B the following features will automatically be added to New System or Upgrade Keycodes when the conditions are met:

- 97 JCO for Japan – in Level 1 for all systems
- 121 SCMP for Japan – in Level 1 for all system types
- 171 JTDS for Japan – in Level 1 for all systems
- 126, 285 & 292 for China – in L1 for all systems
- 131 SUPP for AP and China – in Level 1 for all system types
- 288 DPNSS-ES for AP and China (is na for Japan) – in Level 3b for all system types
- 284 DPNSS 1891 for AP and China (is na for Japan) – in Level 3b for all system types
- 325 DMWI for AP and China (is na for Japan) – in Level 4 for all system types

OPTIONAL FEATURES FOR ASIA PACIFIC Media Gateway 1000B – the following features will be added New Systems when the Order Code for the feature is ordered.

- 22 DISA for all countries in AP - can be added to any level for any system types
- 57 BARS for all countries in AP - can be added to any level for any system types
- 121 SCMP for AP & China – can be added to any level for any system type
- 131 SUPP for Japan only – can be added to any level for any system type

** Feature are selected in NNEC, codes are not provisioned in AP/EMEA for optional features - the feature option is added to the Xlate for inclusion in the keycode.

CALA

The features in the table below are included automatically in the Premium Service Level (L4) for Media Gateway 1000Bs in ALL countries in the region. (Package 407 is not applicable to 1000B)

0, 1, 2, 4, 5, 7, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 58, 59, 60, 61, 62, 63, 64, 67, 70, 71, 72, 73, 74, 75, 76, 77, 79, 80, 81, 83, 86, 87, 88, 89, 90, 91, 92, 93, 95, 98, 99, 100, 101, 102, 103, 104, 105, 107, 108, 109, 110, 111, 113, 114, 115, 116, 117, 118, 119, 120, 122, 123, 124, 125, 126, 127, 128, 129, 131, 132, 133, 134, 135, 137, 138, 139, 140, 141, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 157, 158, 159, 160, 161, 162, 163, 164, 167, 169, 170, 172, 173, 174, 175, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 191, 192, 193, 195, 196, 198, 200, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 214, 215, 216, 218, 219, 222, 223, 224, 225, 229, 231, 232, 233, 234, 235, 236, 240, 242, 243, 245, 246, 247, 249, 250, 251, 253, 254, 256, 258, 259, 261, 262, 263, 283, 284, 288, 289, 290, 291, 294, 295, 296, 297, 301, 305, 306, 307, 308, 309, 310, 311, 312, 315, 316, 321, 323, 325, 324, 327, 328, 329, 330, 331, 332, 333, 334, 348, 350, 351, 362, 364, 367, 380, 381, 382, 384, 385, 386, 387, 388, 389, 390, 393, 394, 397, 398, 399, 400, 401, 406,

DEFAULT FEATURES FOR CALA Media Gateway 1000B: the following features will automatically be added to New System or Upgrade Keycodes when the conditions are met:

There are no Default packages for CALA Branch Office.

OPTIONAL FEATURES FOR CALA Media Gateway 1000B – the following features will be added New Systems when the Order Code for the feature is ordered.

22	DISA	NTE95002 - A0511884	<u>for all countries in CALA</u> - can be added to any level for any system type
57	BARS	NTE95006 - A0511932	<u>for all countries in CALA</u> - can be added to any level for any system type
197	FTA	NTE95018 - A0511945	<u>for all countries in CALA</u> - any system level for any system type

EMEA

The features in the table below are included automatically in the Premium Service Level (L4) for Media Gateway 1000Bs in ALL countries in the region. (Package 407 is not applicable to 1000B)

0, 1, 2, 4, 5, 7, 8, 9, 10, 11, 14, 16, 17, 18, 19, 20, 21, 23, 24, 25, 28, 29, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 58, 59, 60, 61, 62, 63, 64, 67, 70, 71, 72, 73, 74, 75, 76, 77, 79, 80, 81, 83, 86, 87, 88, 89, 90, 91, 92, 93, 95, 98, 99, 100, 101, 102, 103, 104, 107, 108, 109, 110, 111, 113, 114, 115, 116, 118, 119, 120, 122, 123, 124, 125, 127, 128, 129, 131, 132, 133, 134, 137, 138, 139, 140, 141, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 157, 159, 160, 161, 162, 163, 164, 167, 169, 170, 172, 173, 174, 175, 178, 179, 180, 181, 182, 183, 184, 185, 187, 188, 191, 192, 193, 196, 198, 200, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 214, 215, 216, 218, 222, 225, 229, 231, 233, 234, 235, 236, 240, 242, 243, 245, 246, 247, 250, 251, 253, 254, 256, 258, 259, 261, 262, 263, 283, 288, 289, 295, 296, 297, 301, 305, 306, 307, 309, 311, 312, 315, 316, 321, 323, 324, 325, 327, 328, 329, 330, 331, 332, 333, 348, 350, 351, 362, 364, 366, 367, 370, 380, 381, 382, 384, 386, 387, 388, 389, 390, 394, 397, 398, 399, 400, 401, 406,

DEFAULT FEATURES FOR EMEA Media Gateway 1000B – the following features will automatically be added to New System or Upgrade Keycodes when the conditions are met:

- 135 MFE for France – in Level 1 for any system type.
186 POVR for Tele Denmark, Finland and Schrack Poland – in Level 1 for any system type.
197 FTA for Schrack Poland and France – in Level 1 for all System types
190 UK for UK BT and UK Other – in Level 1 for all Large and Small systems
221 CIST for Turkey and CIS – in Level 1 for any system type.
252 KD3 for Spain and Portugal – in Level 1 for any system type.
326 & 221 for CIS – in Level 1 for any system type.
CISMFS

OPTIONAL FEATURES FOR EMEA Media Gateway 1000B – the following features will be added New Systems when the Order Code for the feature is ordered.

- 22 DISA for all countries in EMEA - can be added to any level for any system type
57 BARS for all countries in EMEA except Schrack Damova Poland - can be added to any level for any system type
186 POVR any country other than Denmark/Finland/Poland -any level any system type
221 CIST for Finland & Poland – add to any level for any system type.
284 DPNSS for all countries in EMEA -can be added to level 3b or higher for any system type
304 ARDL for Israel – can be added to any level for any system type
326&221 – CISMFS for Turkey, Finland, Poland – add to any level for any system type.
395 M3900Med for Israel - can be added to any level for any system type
396 & 304 M3900 RGA for Israel - can be added to any level for any system type

** Feature are selected in NNEC, codes are not provisioned in AP/EMEA for Optional features - the feature option is added to the Xlate for inclusion in the keycode.

North America

The features in the table below are included automatically in the Premium Service Level (L4) for Media Gateway 1000Bs in ALL countries in the region. (Package 407 is not applicable to 1000B)

0, 1, 2, 4, 5, 7, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 58, 59, 60, 61, 62, 63, 64, 67, 70, 71, 72, 73, 74, 75, 76, 77, 79, 80, 81, 83, 86, 87, 88, 89, 90, 91, 92, 93, 95, 98, 99, 100, 101, 102, 103, 105, 107, 108, 109, 110, 111, 113, 114, 115, 116, 117, 118, 119, 120, 121, 125, 127, 129, 132, 133, 139, 140, 141, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 157, 158, 159, 160, 161, 162, 163, 164, 167, 170, 172, 173, 174, 175, 178, 179, 180, 181, 183, 184, 185, 186, 191, 192, 200, 202, 203, 204, 205, 206, 207, 208, 209, 210, 212, 214, 215, 216, 218, 219, 222, 223, 224, 225, 229, 233, 234, 235, 240, 242, 243, 245, 246, 247, 249, 250, 251, 253, 254, 256, 258, 259, 263, 291, 295, 296, 297, 301, 305, 306, 307, 310, 311, 312, 315, 316, 321, 324, 327, 328, 329, 330, 331, 332, 333, 334, 348, 350, 351, 362, 364, 380, 381, 382, 384, 385, 387, 388, 389, 390, 393, 394, 397, 398, 399, 400, 401, 406.

DEFAULT FEATURES FOR N.A. Media Gateway 1000B

The following features will automatically be added to New System or Upgrade Keycodes when the conditions are met:

There are no Default features for North American Branch Office.

OPTIONAL FEATURES FOR N.A. Media Gateway 1000B

The following features will be added New Systems when the Order Code for the feature is ordered.

- | | | | |
|----|------|---------------------|--|
| 22 | DISA | NTE95002 - A0511884 | <u>for all countries</u> - can be added to any level for any system type |
| 57 | BARS | NTE95006 - A0511932 | <u>for all countries</u> - can be added to any level for any system type |

Appendix I- Communication Server 1000 Release 4.5 CVSD Structure

Legend

Abbreviation	Description
Y	Yes applicable to the region and system type
na	not applicable to the region or system type
Blue Highlights	Introduced in Rls 4.0
D	Default for the region, specific country or specific system type
D & OP	Default for some countries but Optional for other countries within same region
Op	Optional at any Service Level
OP - L1	Feature Optional only at the specified level or higher
OP-Country	Feature Optional only for the specified country
LS	Applicable for Large systems
SS	Applicable to Small systems
BO	for Branch Office only
r	retired
nu	feature number not used
#	Feature numbers in Bold type - are used Globally (all Regions & System types)

Package Number	Service Level	Package Mnemonic	CVSD Service Level Feature Package Description	CS 1000M Ch/Cab & 11C Ch/Cab	CS 1000M SG/ MG & 61C/81C	CS 1000E	CS 1000S & MG 1000T	MG 1000B	Option 51C	Option 81
0	L1	BASIC	Basic Call Processing	Y	Y	Y	Y	Y	Y	Y
1	L1	OPTF	Extended PBX Features	Y	Y	Y	Y	Y	Y	Y
2	L2	CUST	Multi Customer Operation	Y	Y	Y	Y	Y	Y	Y
3	r	AIOD	Auto-Ident. of Outgoing Calls	r	r	r	r	r	r	r
4	L1	CDR	Call Detail Recording	Y	Y	Y	Y	Y	Y	Y
5	L1	CTY	CDR on TTY	Y	Y	Y	Y	Y	Y	Y
6	r	CLNK	CDR on Data Link	r	r	r	r	r	r	r
7	L1	RAN	Recorded Announcement	Y	Y	Y	Y	Y	Y	Y
8	L1	TAD	Time and Date	Y	Y	Y	Y	Y	Y	Y
9	L1	DNDI	Do Not Disturb, Individual	Y	Y	Y	Y	Y	Y	Y
10	L1	EES	End to End Signaling	Y	Y	Y	Y	Y	Y	Y
11	L1	INTR	Intercept Treatment	Y	Y	Y	Y	Y	Y	Y
12	L1	ANI	Automatic Number Identification	Y	Y	Y	Y	Y	Y	Y
13	L1	ANIR	ANI Route Selection	Y	Y	Y	Y	Y	Y	Y
14	L1	BRTE	Basic Routing	Y	Y	Y	Y	Y	Y	Y

Package Number	Service Level	Package Mnemonic	CVSD Service Level Feature Package Description	CS 1000M Ch/Cab & 11C Ch/Cab	CS 1000M SG/ MG & 61C/81C	CS 1000E	CS 1000S & MG 1000T	MG 1000B	Option 51C	Option 81
15	L1	RPE1.5	1.5 Mbit Remote Peripheral Equipment mutually exclusive with 165	r	r	r	r	r	r	r
16	L1	DNDG	Do Not Disturb, Group	Y	Y	Y	Y	Y	Y	Y
17	L1	MSB	Make Set Busy	Y	Y	Y	Y	Y	Y	Y
18	L1	SS25	Special Services for 2500 Sets	Y	Y	Y	Y	Y	Y	Y
19	L1	DDSP	Digit Display	Y	Y	Y	Y	Y	Y	Y
20	L1	ODAS	Office Data Administration System	Y	Y	Y	Y	Y	Y	Y
21	L1	DI	Dial Intercom	Y	Y	Y	Y	Y	Y	Y
22	OP	DISA	Direct Inward System Access	Y	Y	Y	Y	Y	Y	Y
23	L1	CHG	Charge Account for CDR	Y	Y	Y	Y	Y	Y	Y
24	L1	CAB	Charge Account/Authorization Code	Y	Y	Y	Y	Y	Y	Y
25	L1	BAUT	Basic Authorization Code	Y	Y	Y	Y	Y	Y	Y
26	L2	CASM	Centralized Attendant Service (Main)	Y	Y	Y	Y	Y	Y	Y
27	L2	CASR	Centralized Attendant Service (Remote)	Y	Y	Y	Y	Y	Y	Y
28	L1	BQUE	Basic Queing	Y	Y	Y	Y	Y	Y	Y
29	L1	NTRF	Network Traffic Measurement	Y	Y	Y	Y	Y	Y	Y
30	r	CMAC	Network Comm. Mgmt Center Interface	r	r	r	r	r	r	r
31	r	MCDR	Mini CDR	r	r	r	r	r	r	r
32	L1	NCOS	Network Class of Service	Y	Y	Y	Y	Y	Y	Y
33	L1	CPRK	Call Park	Y	Y	Y	Y	Y	Y	Y
34	L1	SSC	System Speed Call	Y	Y	Y	Y	Y	Y	Y
35	L1	IMS	Integr Messaging System Link	Y	Y	Y	Y	Y	Y	Y
36	L1	ROA	Recorded Overflow Announcement	Y	Y	Y	Y	Y	Y	Y
37	L2	NSIG	Network Signaling	Y	Y	Y	Y	Y	Y	Y
38	L3B	MCBQ	Network Call Back Queuing - Main	Y	Y	Y	Y	Y	Y	Y
39	L3B	NSC	Network Speed Call	Y	Y	Y	Y	Y	Y	Y
40	L1	BACD	Basic Automatic Call Distribution	Y	Y	Y	Y	Y	Y	Y
41	L1	ACD-B	ACD Pkg B Advanced Features	Y	Y	Y	Y	Y	Y	Y
42	L2	ACDC	ACD Pkg C1 Load Mgmt Reports	Y	Y	Y	Y	Y	Y	Y

Package Number	Service Level	Package Mnemonic	CVSD Service Level Feature Package Description	CS 1000M Ch/Cab & 11C Ch/Cab	CS 1000M SG/ MG & 61C/81C	CS 1000E	CS 1000S & MG 1000T	MG 1000B	Option 51C	Option 81
43	L2	LMAN	ACD Pkg C2. Enh. Load Mgmt. Reports	Y	Y	Y	Y	Y	Y	Y
44	L1	MUS	Music	Y	Y	Y	Y	Y	Y	Y
45	L1	ACD-A	ACD Pkg A Basic Features ACD services	Y	Y	Y	Y	Y	Y	Y
46	L1	MWC	Message Waiting Center	Y	Y	Y	Y	Y	Y	Y
47	L1	AAB	Automatic Answer Back	Y	Y	Y	Y	Y	Y	Y
48	L1	GRP	Group Call	Y	Y	Y	Y	Y	Y	Y
49	L1	NFCR	New Flexible Code Restriction	Y	Y	Y	Y	Y	Y	Y
50	L3A	ACD-D	ACD Pkg D-Enh Mgmt Displays	Y	Y	Y	Y	Y	Y	Y
51	L1	LNK	ACD PkgD Auxillary Processor Link	Y	Y	Y	Y	Y	Y	Y
52	L1	FCA	Forced Charge Account	Y	Y	Y	Y	Y	Y	Y
53	L1	SR	Set relocation	Y	Y	Y	Y	Y	Y	Y
54	L1	AA	Attendant Administration	Y	Y	Y	Y	Y	Y	Y
55	L1	HIST	History File	Y	Y	Y	Y	Y	Y	Y
56	L1	AOP	Attendant Overflow Position <i>was me</i>	Y	Y	Y	Y	Y	Y	Y
57	OP-L1	BARS	Basic Alternate Route Selection	Y	Y	Y	Y	Y	Y	Y
58	L1	NARS	Ntwk Alternate Route Selection	Y	Y	Y	Y	Y	Y	Y
59	L1	CDP	Coordinated Dialing Plan	Y	Y	Y	Y	Y	Y	Y
60	L2	PQUE	Priority Queuing	Y	Y	Y	Y	Y	Y	Y
61	L1	FCBQ	Flexible Call Back Queuing	Y	Y	Y	Y	Y	Y	Y
62	L3B	OHQ	Off Hook Queuing	Y	Y	Y	Y	Y	Y	Y
63	L2	NAUT	Network Authorization Code	Y	Y	Y	Y	Y	Y	Y
64	L1	SNR	Stored Number Redial	Y	Y	Y	Y	Y	Y	Y
65	L1-LS	TDET	MF Tone Detector <i>Large Systems Only</i>	na	Y	Y	na	na	Y	Y
66	r	SCC	SL-1 TDET Special Common Carrier	r	r	r	r	r	r	r
67	L3B	NXFR	Network Call Transfer	Y	Y	Y	Y	Y	Y	Y
70	L1	HOT/E HOT	HOT Line Services/Enhanced HOT Line	Y	Y	Y	Y	Y	Y	Y
71	L1	DHLD	Deluxe Hold	Y	Y	Y	Y	Y	Y	Y
72	L1	LSEL	Automatic Line Selection	Y	Y	Y	Y	Y	Y	Y

Package Number	Service Level	Package Mnemonic	CVSD Service Level Feature Package Description	CS 1000M Ch/Cab & 11C Ch/Cab	CS 1000M SG / MG & 61C/81C	CS 1000E	CS 1000S & MG 1000T	MG 1000B	Option 51C	Option 81
73	L1	SS5	500 Set Features	Y	Y	Y	Y	Y	Y	Y
74	L1	DRNG	Distinctive Ringing	Y	Y	Y	Y	Y	Y	Y
75	L1	PBXI	PBX Interface for DTI/CPI (1.5Mb)	Y	Y	Y	Y	Y	Y	Y
76	L1	DLDN	Departmental Listed Directory #	Y	Y	Y	Y	Y	Y	Y
77	L1	CSL	Command Status Link	Y	Y	Y	Y	Y	Y	Y
78	r	AMP	Automated Modem Pooling	r	r	r	r	r	r	r
79	L1	OOD	Optional Outpulsing Delay	Y	Y	Y	Y	Y	Y	Y
80	L1	SCI	Station Category Indication	Y	Y	Y	Y	Y	Y	Y
81	L1	CCOS	Controlled Class of Service	Y	Y	Y	Y	Y	Y	Y
82	r	RESDB	Resedent Debug	r	r	r	r	r	r	r
83	L1	CDRQ	ACD CDR Queue Record	Y	Y	Y	Y	Y	Y	Y
84	r	ATM	Automatic Trunk Maintenance - Retired- with Succession 3.0	r	r	r	r	r	r	r
85	r	CSLA	CSL with Alpha Signaling	r	r	r	r	r	r	r
86	L2	TENS	Multiple Tenant Service	Y	Y	Y	Y	Y	Y	Y
87	L1	FTDS	Fast Tone & Digit Switch	Y	Y	Y	Y	Y	Y	Y
88	L1	DSET	M2000 Digital Sets	Y	Y	Y	Y	Y	Y	Y
89	L1	TSET	M3000 Digital Sets	Y	Y	Y	Y	Y	Y	Y
90	L1	LNR	Last Number Redial	Y	Y	Y	Y	Y	Y	Y
91	L1	DLT2	M2317 Digital Sets	Y	Y	Y	Y	Y	Y	Y
92	L1	PXLT	Pre translation	Y	Y	Y	Y	Y	Y	Y
93	L1	SUPV	Supervisory Attendant Console	Y	Y	Y	Y	Y	Y	Y
94	r	JTDS	Japan specific	r	r	r	r	r	r	r
95	L1	CPND	Call Party Name Display	Y	Y	Y	Y	Y	Y	Y
96	r	SLST	Meridian SL-1 ST	r	r	r	r	r	r	r
97	L1	JCO	Japan - CO Trunks	Y	Y	Y	Y	Y	Y	Y
98	L1	DNIS	Dialed Number Identification Service	Y	Y	Y	Y	Y	Y	Y
99	L1	BGD	Background Terminal Facility	Y	Y	Y	Y	Y	Y	Y
100	L1	RMS	Room Status	Y	Y	Y	Y	Y	Y	Y
101	L1	MR	PPM / Message Registration	Y	Y	Y	Y	Y	Y	Y
102	L1	AWU	Automatic Wake Up	Y	Y	Y	Y	Y	Y	Y
103	L1	PMSI	Property Mgmt. System Interface	Y	Y	Y	Y	Y	Y	Y
104	L1	OPAO	Outpulsing of * and #	Y	Y	Y	Y	Y	Y	Y
105	L1	LLC	Line Load Control	Y	Y	Y	Y	Y	Y	Y

Package Number	Service Level	Package Mnemonic	CVSD Service Level Feature Package Description	CS 1000M Ch/Cab & 11C Ch/Cab	CS 1000M SG/ MG & 61C/81C	CS 1000E	CS 1000S & MG 1000T	MG 1000B	Option 51C	Option 81
107	L1	MCT	Malicious Call Trace	Y	Y	Y	Y	Y	Y	Y
108	L1	ICDR	Internal CDR	Y	Y	Y	Y	Y	Y	Y
109	L1	APL	Auxillary Processor Link	Y	Y	Y	Y	Y	Y	Y
110	L1	TVS	Trunk Verification from a Station	Y	Y	Y	Y	Y	Y	Y
111	L1	TOF	ACD Timed Overflow	Y	Y	Y	Y	Y	Y	Y
112	r	NKL	Notification Key Lamp	r	r	r	r	r	r	r
113	L1	IDC	Incoming DID Digit Conversion	Y	Y	Y	Y	Y	Y	Y
114	L3A	AUXS	ACD D Auxillary Security	Y	Y	Y	Y	Y	Y	Y
115	L1	DCP	Direct Call Pickup	Y	Y	Y	Y	Y	Y	Y
116	L2	PAGT	ACD Priority Agent	Y	Y	Y	Y	Y	Y	Y
117	L1	CBC	Call by Call Service Selection	Y	Y	Y	Y	Y	Y	Y
118	L2	CCDR	Calling Line ID in CDR	Y	Y	Y	Y	Y	Y	Y
119	L1	EMUS	Enhanced Music	Y	Y	Y	Y	Y	Y	Y
120	L1	PLDN	Group Hunt / DN Access to SCL	Y	Y	Y	Y	Y	Y	Y
121	L1	SCMP	Station Camp On	Y	Y	Y	Y	Y	Y	Y
122	L1	COMD T	Common DAS/DPNSS DTRK	Y	Y	Y	Y	Y	Y	Y
123	L2	DPNSS	DPNSS	Y	Y	Y	Y	Y	Y	Y
124	L1	DASS2	DASS2	Y	Y	Y	Y	Y	Y	Y
125	L1	FTC	Flexible Tones and Cadences	Y	Y	Y	Y	Y	Y	Y
126	L1	OPCB	China - Operator Call Back (China #1)	Y	Y	Y	Y	Y	Y	Y
127	L1	BKI	Attendant Break In	Y	Y	Y	Y	Y	Y	Y
128	L1	MFC	Multi-Frequency Compelled Signaling	Y	Y	Y	Y	Y	Y	Y
129	L1	DTI2	2 Mbit DTI	Y	Y	Y	Y	Y	Y	Y
130	nu	NIL PTR	never used/not available	nu	nu	nu	nu	nu	nu	nu
131	L1	SUPP	International Supplementary Features	Y	Y	Y	Y	Y	Y	Y
132	L1	TBAR	Trunk Barring	Y	Y	Y	Y	Y	Y	Y
133	L1	ENS	Enhanced Night Service	Y	Y	Y	Y	Y	Y	Y
134	L1	AFNA	Attendant Forward No Answer - was <i>me</i>	Y	Y	Y	Y	Y	Y	Y
135	L1	MFE	Multi-Frequency Socotel - France+others	Y	Y	Y	Y	Y	Y	Y
136	L1-	JDMI	2 MB Digital Mux Interface	na	Y	Y	na	na	Y	Y

Package Number	Service Level	Package Mnemonic	CVSD Service Level Feature Package Description	CS 1000M Ch/Cab & 11C Ch/Cab	CS 1000M SG/ MG & 61C/81C	CS 1000E	CS 1000S & MG 1000T	MG 1000B	Option 51C	Option 81
	LS		Japan Large Systems Only							
137	L1	LSCM	Local Steering Code Modification	Y	Y	Y	Y	Y	Y	Y
138	L1	DTD	Dial Tone Detector	Y	Y	Y	Y	Y	Y	Y
139	L1	FFC	Flexible Feature Codes	Y	Y	Y	Y	Y	Y	Y
140	L1	DCON	M2250 Attendant Console	Y	Y	Y	Y	Y	Y	Y
141	L1	MPO	Multi-Party Operations	Y	Y	Y	Y	Y	Y	Y
142	r	AHLD	Pkg was defined as "AHLD" but released	r	r	r	r	r	r	r
143	L1	ICP	Intercept Computer	Y	Y	Y	Y	Y	Y	Y
144	L1	ABCD	16 - Button DTMF	Y	Y	Y	Y	Y	Y	Y
145	L1	ISDN	ISDN Signaling	Y	Y	Y	Y	Y	Y	Y
146	L1	PRA	ISDN 1.5 Mbit PRA	Y	Y	Y	Y	Y	Y	Y
147	L2	ISL	ISDN Signaling Link	Y	Y	Y	Y	Y	Y	Y
148	L2	NTWK	Advanced ISDN Ntwk Services	Y	Y	Y	Y	Y	Y	Y
149	L2	IEC	Inter-Exchange Carrier	Y	Y	Y	Y	Y	Y	Y
150	L1	DNXP	DN Expansion (7 digit)	Y	Y	Y	Y	Y	Y	Y
151	L1	CDRE	CDR Expansion (7 digit)	Y	Y	Y	Y	Y	Y	Y
152	L2	FXS	Agent Greeting	Y	Y	Y	Y	Y	Y	Y
153	L1	IAP3P	ISDN Application Processor Third Party Vendors	Y	Y	Y	Y	Y	Y	Y
154	L1	PRI2	2 Mbit PRI	Y	Y	Y	Y	Y	Y	Y
155	L3A	ACNT	ACD Activity Code	Y	Y	Y	Y	Y	Y	Y
156	nu	na	never used/not available	nu	nu	nu	nu	nu	nu	nu
157	L1	THF	Centrex Switch Hook Flash	Y	Y	Y	Y	Y	Y	Y
158	L3B	FGD	Feat Group D	Y	Y	Y	Y	Y	Y	Y
159	L3B	NAS	Network Attendant Service - <i>formally me</i>	Y	Y	Y	Y	Y	Y	Y
160	L1	FNP	Flexible Numbering Plan	Y	Y	Y	Y	Y	Y	Y
161	L1	ISDN INTL	ISDN Supplementary Features	Y	Y	Y	Y	Y	Y	Y
162	L1	SAR	Scheduled Access Restriction	Y	Y	Y	Y	Y	Y	Y
163	L1	MIN	Message Intercept	Y	Y	Y	Y	Y	Y	Y
164	L1	LAPW	Limited Access to Overlays	Y	Y	Y	Y	Y	Y	Y
165	L1	RPE2	2 Mbit Remote Peripheral Equipment mutually exclusive with 15	r	r	n/a	r	r	Y	Y
166	r	HOSP	Hospital Management	r	r	r	r	r	r	r

Package Number	Service Level	Package Mnemonic	CVSD Service Level Feature Package Description	CS 1000M Ch/Cab & 11C Ch/Cab	CS 1000M SG/ MG & 61C/81C	CS 1000E	CS 1000S & MG 1000T	MG 1000B	Option 51C	Option 81
167	L1	GPRI	Int'l 1.5/2.0 MBit Gateway	Y	Y	Y	Y	Y	Y	Y
168	r	TMON	Traffic Monitoring	r	r	r	r	r	r	r
169	L1	COOP	Console Operations	Y	Y	Y	Y	Y	Y	Y
170	L1	ARIE	Meridian Modular Telephone Sets	Y	Y	Y	Y	Y	Y	Y
171	L1	JTDS	Japan-Tone&Digit Switch me 69 & 106	Y	Y	Y	Y	Y	Y	Y
172	L2	CPGS	Console Presentation Group Level Services	Y	Y	Y	Y	Y	Y	Y
173	L1	ECCS	Enhanced Controlled Class of Service	Y	Y	Y	Y	Y	Y	Y
174	L1	AAA	Attendant Alternative Answering - was me	Y	Y	Y	Y	Y	Y	Y
175	L3B	NMS	Network Message Service	Y	Y	Y	Y	Y	Y	Y
176	r	DTOT	DID to Tie	r	r	r	r	r	r	r
177	nu	na	never used/not available	nu	nu	nu	nu	nu	nu	nu
178	L2	EOVF	ACD Enhanced Overflow	Y	Y	Y	Y	Y	Y	Y
179	L1	HVS	Meridian Hospitality Voice Services	Y	Y	Y	Y	Y	Y	Y
180	L1	DKS	Digit Key Signaling	Y	Y	Y	Y	Y	Y	Y
181	L1	SACP	Semi-Automatic Camp-On	Y	Y	Y	Y	Y	Y	Y
182	L1	TFM	Trunk Failure Monitor	Y	Y	Y	Y	Y	Y	Y
183	L3B	VNS	Virtual Network Services	Y	Y	Y	Y	Y	Y	Y
184	L1	OVPL	Overlap Signaling	Y	Y	Y	Y	Y	Y	Y
185	L1	EDRG	Executive Distinctive Ringing	Y	Y	Y	Y	Y	Y	Y
186	L1	POVR	Priority Override / Forced Camp on	Y	Y	Y	Y	Y	Y	Y
187	L1	RPA	Radio Paging	Y	Y	Y	Y	Y	Y	Y
188	L3B	L1MF	L1-MFC Signaling	Y	Y	Y	Y	Y	Y	Y
189	L1	SVCT	Supervisory Console Tones	Y	Y	Y	Y	Y	Y	Y
190	L1	UK	UK -Hardware Support (UK -BT & UL other)	Y	Y	Y	Y	Y	Y	Y
191	L1	SECL	Series call	Y	Y	Y	Y	Y	Y	Y
192	L3B	ORC- RVQ	Remote Virtual Queing/Drop Back Busy	Y	Y	Y	Y	Y	Y	Y
193	L1	RCK	Ring Change Key	Y	Y	Y	Y	Y	Y	Y
194	nu	na	never used/not available	nu	nu	nu	nu	nu	nu	nu
195	L1	FAXS	HiMail Fax Server Interface	Y	Y	Y	Y	Y	Y	Y

Package Number	Service Level	Package Mnemonic	CVSD Service Level Feature Package Description	CS 1000M Ch/Cab & 11C Ch/Cab	CS 1000M SG/ MG & 61C/81C	CS 1000E	CS 1000S & MG 1000T	MG 1000B	Option 51C	Option 81
196	L1	OHOL	On Hold on Loudspeaker	Y	Y	Y	Y	Y	Y	Y
197	L1	FTA	French - Type Approval (+ others)	Y	Y	Y	Y	Y	Y	Y
198	L1	FFCSF	Boss Secretarial Filtering	Y	Y	Y	Y	Y	Y	Y
199	nu	na	never used/not available	nu	nu	nu	nu	nu	nu	nu
200	L1 - SS	AINS	Automatic Set Based Installation	Y	na	na	Y	Y	na	na
201	nu	na	never used/not available	nu	nu	nu	nu	nu	nu	nu
202	L1	IPRA	International PRA (CO)	Y	Y	Y	Y	Y	Y	Y
203	L1	XPE	Extended Peripheral Equipment	Y	Y	Y	Y	Y	Y	Y
204	L1	XCT0	Enhanced Conf, TDS, and MFS Card	Y	Y	Y	Y	Y	Y	Y
205	L1	XCT1	Superloop Administration (LD 97)	Y	Y	Y	Y	Y	Y	Y
206	L1	MLW U	Multilanguage Wake-Up	Y	Y	Y	Y	Y	Y	Y
207	L4	NACD	Network ACD	Y	Y	Y	Y	Y	Y	Y
208	L1	HSE	Hospitality Screen Enh	Y	Y	Y	Y	Y	Y	Y
209	L2	MLS	Meridian Link Server	Y	Y	Y	Y	Y	Y	Y
210	L1	MAID	Maid ID for room status	Y	Y	Y	Y	Y	Y	Y
211	L1	MLIO	Multilanguage CPND	Y	Y	Y	Y	Y	Y	Y
212	L1	VIP	VIP Automatic Wake-Up	Y	Y	Y	Y	Y	Y	Y
213	nu	na	never used/not available	nu	nu	nu	nu	nu	nu	nu
214	L1	EAR	Enhanced ACD Routing	Y	Y	Y	Y	Y	Y	Y
215	L1	CCRC	Cust Controlled Routing	Y	Y	Y	Y	Y	Y	Y
216	L1	BRI	ISDN Basic Rate Interface	Y	Y	Y	Y	Y	Y	Y
217	nu	na	never used/not available	nu	nu	nu	nu	nu	nu	nu
218	L1	IVR	Hold in Queue for IVR	Y	Y	Y	Y	Y	Y	Y
219	L3B	MWI	MWI Interworking with DMS	Y	Y	Y	Y	Y	Y	Y
220	nu	na	never used/not available	nu	nu	nu	nu	nu	nu	nu
221	D & OP L1	CIST	CIST-Digital Trk Interface/3- Wire Analog(IPE)	Y	Y	Y	Y	Y	Y	Y
222	L1	MSDL	Multi-Purpose Serial Data Link	Y	Y	Y	Y	Y	Y	Y
223	L1	FC68	Compliance for DID Answer Supper	Y	Y	Y	Y	Y	Y	Y
224	L3A	M911	Meridian 911	Y	Y	Y	Y	Y	Y	Y

Package Number	Service Level	Package Mnemonic	CVSD Service Level Feature Package Description	CS 1000M Ch/Cab & ITC Ch/Cab	CS 1000M SG/ MG & 6IC/8IC	CS 1000E	CS 1000S & MG 1000T	MG 1000B	Option 51C	Option 81
			ENHANCEMENTS							
225	L3A	CWNT	Call Waiting Notification	Y	Y	Y	Y	Y	Y	Y
226	nu	na	never used/not available	nu	nu	nu	nu	nu	nu	nu
227	L1 - LS	MSDL SDI	MSDL - SDI	na	Y	Y	na	na	Y	Y
228	L1 - LS	STA	Single Terminal Access	na	Y	Y	na	na	Y	Y
229	L1	SSAC	Station Specific Auth Codes	Y	Y	Y	Y	Y	Y	Y
230	r	MDP	Manufactured Delivered Patches	r	r	r	r	r	r	r
231	L3B	DNWK	DPNSS Network Services	Y	Y	Y	Y	Y	Y	Y
232	L1	PEDM	Pulsed EAM (French Colisee) L.Systems	na	Y	Y	na	na	Y	Y
233	L1	BRIT	BRI Trunk Application	Y	Y	Y	Y	Y	Y	Y
234	L1	CDR- NEW	New Format CDR	Y	Y	Y	Y	Y	Y	Y
235	L1	BRIL	BRI Line Application	Y	Y	Y	Y	Y	Y	Y
236	L1	ACRL	AC15 TIMED RECAL	Y	Y	Y	Y	Y	Y	Y
237	nu	na	never used/not available	nu	nu	nu	nu	nu	nu	nu
238	nu	na	never used/not available	nu	nu	nu	nu	nu	nu	nu
239	nu	na	never used/not available	nu	nu	nu	nu	nu	nu	nu
240	L1	MCM	M1 CT2/CT2+ Mobility	Y	Y	Y	Y	Y	Y	Y
241	nu	na	never used/not available	nu	nu	nu	nu	nu	nu	nu
242	L1	MULT I USER	Multi User Login	Y	Y	Y	Y	Y	Y	Y
243	L1	FM	Meridian 1 Fault management	Y	Y	Y	Y	Y	Y	Y
244	nu	na	never used/not available	nu	nu	nu	nu	nu	nu	nu
245	L1	SML	System Message Look up	Y	Y	Y	Y	Y	Y	Y
246	L1	VMB	Voice Mail Box	Y	Y	Y	Y	Y	Y	Y
247	L1	CLID	Call ID for Meridian Link	Y	Y	Y	Y	Y	Y	Y
248	OP- LS L1	MPH	Meridian 1 Packet Handler (SL100)	na	Y	na	na	na	Y	Y
249	L3A	ENH_ M911	10/20 Digit ANI on 911 Calls	Y	Y	Y	Y	Y	Y	Y
250	L1	DPNA	Direct Private Network Access	Y	Y	Y	Y	Y	Y	Y
251	L1	SCDR	Station Activity Record	Y	Y	Y	Y	Y	Y	Y

Package Number	Service Level	Package Mnemonic	CVSD Service Level Feature Package Description	CS 1000M Ch/Cab & 11C Ch/Cab	CS 1000M SG/ MG & 61C/81C	CS 1000E	CS 1000S & MG 1000T	MG 1000B	Option 51C	Option 81
252	L1	KD3	KD3 DID/DOD Interface Span & Portugal	Y	Y	Y	Y	Y	Y	Y
253	L1	ARFW	Attn & Networkwide RCFW	Y	Y	Y	Y	Y	Y	Y
254	L1	PHTN	Phantom TN Operation	Y	Y	Y	Y	Y	Y	Y
255	L1	INBD	International nB+D	Y	Y	Y	Y	Y	Y	Y
256	L1	ADMI NSET	Set Based Admin Enhancements	Y	Y	Y	Y	Y	Y	Y
257	r	EQA	32, (for FCC) discontinued 20.19B	r	r	r	r	r	r	r
258	L1	ATX	Autodial Tandem Transfer	Y	Y	Y	Y	Y	Y	Y
259	L1	CDRX	CDR Enhancements	Y	Y	Y	Y	Y	Y	Y
260	nu	na	never used/not available	nu	nu	nu	nu	nu	nu	nu
261	L1	EURO	Euro ISDN	Y	Y	Y	Y	Y	Y	Y
262	L3B	SAMM	Standalone Meridian Mail- interface 3rd party	Y	Y	Y	Y	Y	Y	Y
263	L2	QSIG	ECMA Q-Sig Interface	Y	Y	Y	Y	Y	Y	Y
264	r	MLMS BRZ	Brazilian	r	r	r	r	r	r	r
265	r	MLMS PRC	Mainland Chinese - PRC	r	r	r	r	r	r	r
266	r	MLMS ROC	Taiwan Chinese	r	r	r	r	r	r	r
267	r	MLMS DAN	Danish	r	r	r	r	r	r	r
268	r	MLMS DUT	Dutch	r	r	r	r	r	r	r
269	r	MLMS FIN	Finish	r	r	r	r	r	r	r
270	r	MLMS FRC	French Canadian	r	r	r	r	r	r	r
271	r	MLMS FRE	Euro French	r	r	r	r	r	r	r
272	r	MLMS GER	German	r	r	r	r	r	r	r
273	r	MLMS ITL	Italian	r	r	r	r	r	r	r
274	r	MLMS	Japanese	r	r	r	r	r	r	r

Package Number	Service Level	Package Mnemonic	CVSD Service Level Feature Package Description	CS 1000M Ch/Cab & 11C Ch/Cab	CS 1000M SG/ MG & 61C/81C	CS 1000E	CS 1000S & MG 1000T	MG 1000B	Option 51C	Option 81
		JPN								
275	r	MLMS KOR	Korean	r	r	r	r	r	r	r
276	r	MLMS NRW	Norwegian	r	r	r	r	r	r	r
277	r	MLMS RUS	Russian	r	r	r	r	r	r	r
278	r	MLMS SPE	Euro Spanish	r	r	r	r	r	r	r
279	r	MLMS LASP	Latin American Spanish	r	r	r	r	r	r	r
280	r	MLMS SWE	Swedish	r	r	r	r	r	r	r
281	r	ZPAG	not introduced	r	r	r	r	r	r	r
282	nu	na	never used/not available	nu	nu	nu	nu	nu	nu	nu
283	L1	UIGW	Universal ISDN Gateway	Y	Y	Y	Y	Y	Y	Y
284	L3B	DPNSS 189I	DPNSS 189I	Y	Y	Y	Y	Y	Y	Y
285	OP- L1	CHIN A	China Attendant Monitor	Y	Y	Y	Y	Y	Y	Y
286	LS	REM_I PE	Carrier Remote IPE	na	Y	Y	na	na	Y	Y
287	nu	na	never used/not available	nu	nu	nu	nu	nu	nu	nu
288	L3B	DPNSS -ES	DPNSS Enhanced Services	Y	Y	Y	Y	Y	Y	Y
289	L1	ADSP	ACD Disconnect Supervision	Y	Y	Y	Y	Y	Y	Y
290	L1	CCB	Collect Call Blocking	Y	Y	Y	Y	Y	Y	Y
291	L1	NI2	NI-2 TR-1268 PRI Basic Call	Y	Y	Y	Y	Y	Y	Y
292	OP- L1	CHTL	China Toll Call Loss Plan	Y	Y	Y	Y	Y	Y	Y
293	r	TAT	Trunk Anti-Tromboning	r	r	r	r	r	r	r
294	L1	BTD	Busy Tone Detection	Y	Y	Y	Y	Y	Y	Y
295	L1 - SS	IPEX	IP Expansion Option 11C/11C mini	Y	na	na	Y	Y	na	na
296	L1	MAT	MAT Management Interface	Y	Y	Y	Y	Y	Y	Y
297	L3A	MQA	Mutiple Queue Assignment	Y	Y	Y	Y	Y	Y	Y
298	L1	CPIO	Opt 81 old backplane *	na	na	na	na	na	na	Y

Package Number	Service Level	Package Mnemonic	CVSD Service Level Feature Package Description	CS 1000M Ch/Cab & 11C Ch/Cab	CS 1000M SG/ MG & 61C/81C	CS 1000E	CS 1000S & MG 1000T	MG 1000B	Option 51C	Option 81
			<u>Upgrades Only</u>							
299	LS	CORE-NET	Option 81C (New Backplane)	na	Y	Y	na	na	na	na
300	nu	na	never used/not available	nu	nu	nu	nu	nu	nu	nu
301	L1	CPP	Calling Party Privacy	Y	Y	Y	Y	Y	Y	Y
302	r	MOSR	Mobility Server	r	r	r	r	r	r	r
303	r	MMO	Mobility Microcellular	r	r	r	r	r	r	r
304	OP-L1	ARDL	Automatic Redial (Israeli Market)	Y	Y	Y	Y	Y	Y	Y
305	L3B	QSIGGF	QSIG GF Transport	Y	Y	Y	Y	Y	Y	Y
306	L2	CPRKNET	Call Park Networkwide	Y	Y	Y	Y	Y	Y	Y
307	L2	PAGENET	Call Page Networkwide	Y	Y	Y	Y	Y	Y	Y
308	L1	PTU	Perferential Trunk Usage	Y	Y	Y	Y	Y	Y	Y
309	L2	MASTER	Euro ISDN Master Mode	Y	Y	Y	Y	Y	Y	Y
310	L1	CPCI	Called Party Control	Y	Y	Y	Y	Y	Y	Y
311	L3A	NGCC	Next Generation Call Center	Y	Y	Y	Y	Y	Y	Y
312	L2	TATO	Trunk Antitromboning/Route Optimisation	Y	Y	Y	Y	Y	Y	Y
313	L3B	ISPC	Australian - SPCs	Y	Y	Y	Y	Y	Y	Y
314	r	MMSN	Mobility Multisite Network	r	r	r	r	r	r	r
315	L1	SNMP_ALARM	SNMP Alarm integration	Y	Y	Y	Y	Y	Y	Y
316	L3B	QSIG_SS	Qsig ISDN Supplementary Services	Y	Y	Y	Y	Y	Y	Y
317	nu	na	never used/not available	nu	nu	nu	nu	nu	nu	nu
318	nu	na	never used/not available	nu	nu	nu	nu	nu	nu	nu
319	nu	na	never used/not available	nu	nu	nu	nu	nu	nu	nu
320	nu	na	never used/not available	nu	nu	nu	nu	nu	nu	nu
321	L4	QTN	Queu to NACD for CCR	Y	Y	Y	Y	Y	Y	Y
322	nu	na	never used/not available	nu	nu	nu	nu	nu	nu	nu
323	L1	EISDN_SS	Euro ISDN Supplementary Services	Y	Y	Y	Y	Y	Y	Y

Package Number	Service Level	Package Mnemonic	CVSD Service Level Feature Package Description	CS 1000M Ch/Cab & 11C Ch/Cab	CS 1000M SG/ MG & 61C/81C	CS 1000E	CS 1000S & MG 1000T	MG 1000B	Option 51C	Option 81
324	L1	NGEN	New Generation Foundation	Y	Y	Y	Y	Y	Y	Y
325	L4	DMWI	DPNSS Message Waiting & NTWK 3rd party system	Y	Y	Y	Y	Y	Y	Y
326	OP-L1	CISMF S	CIS - MF Shuttle Signaling	Y	Y	Y	Y	Y	Y	Y
327	L1	RANB RD	RAN Broadcast	Y	Y	Y	Y	Y	Y	Y
328	L1	MUSB RD	Music Broadcast	Y	Y	Y	Y	Y	Y	Y
329	L1	ESA	Emergency Services Access 911	Y	Y	Y	Y	Y	Y	Y
330	L1	ESA_S UP	Emergency Services Access Suppl. 911	Y	Y	Y	Y	Y	Y	Y
331	L2	ESA_C LMP	Emergency Services Access Calling Number	Y	Y	Y	Y	Y	Y	Y
332	L1	CNUM B	Class: Calling Name Delivery	Y	Y	Y	Y	Y	Y	Y
333	L1	CNAM E	Class: Calling Number Delivery	Y	Y	Y	Y	Y	Y	Y
334	L2	NI-2 CBC	NI-2 Call by Call Service Selection	Y	Y	Y	Y	Y	Y	Y
335	L3B	GTTC	Japan - TTC Common Channel Signal.	Y	Y	Y	Y	Y	Y	Y
336	nu	na	never used/not available	nu	nu	nu	nu	nu	nu	nu
337	nu	na	never used/not available	nu	nu	nu	nu	nu	nu	nu
338	nu	na	never used/not available	nu	nu	nu	nu	nu	nu	nu
339	nu	na	never used/not available	nu	nu	nu	nu	nu	nu	nu
340	nu	na	never used/not available	nu	nu	nu	nu	nu	nu	nu
341	nu	na	never used/not available	nu	nu	nu	nu	nu	nu	nu
342	nu	na	never used/not available	nu	nu	nu	nu	nu	nu	nu
343	nu	na	never used/not available	nu	nu	nu	nu	nu	nu	nu
344	r	GCM	German - Call Monitoring SORM	r	r	r	r	r	r	r
345	r	UWIN	Universal Wireless Interactive Networking	r	r	r	r	r	r	r
346	r	SMS	never used/not available	r	r	r	r	r	r	r
347	L1	TWR1	Taiwan - CO R1 Modified Signaling (T1)	Y	Y	Y	Y	Y	Y	Y
348	L3B	MEET	MCDN End To End	Y	Y	Y	Y	Y	Y	Y

Package Number	Service Level	Package Mnemonic	CVSD Service Level Feature Package Description	CS 1000M Ch/Cab & 11C Ch/Cab	CS 1000M SG/ MG & 61C/81C	CS 1000E	CS 1000S & MG 1000T	MG 1000B	Option 51C	Option 81
			Transparency							
349	L1	ACLI	Japan - Information Notification Service	Y	Y	Y	Y	Y	Y	Y
350	L1	MC32	Meridian Companion Enhanced Capacity	Y	Y	Y	Y	Y	Y	Y
351	L2	DBA	MAT/OTM Data Buffering and Access	Y	Y	Y	Y	Y	Y	Y
352	r	MMCS	never used/not available	r	r	r	r	r	r	r
353	OP-LS-L1	RUCM	Russian(CIS) - Call Monitoring SORM	Y	Y	Y	Y	Y	*Opt6 1C & 8 1C	*Opt 61 C & 81 C
354	nu	na	never used/not available	nu	nu	nu	nu	nu	nu	nu
355	nu	na	never used/not available	nu	nu	nu	nu	nu	nu	nu
356	nu	na	never used/not available	nu	nu	nu	nu	nu	nu	nu
357	nu	na	never used/not available	nu	nu	nu	nu	nu	nu	nu
358	nu	na	never used/not available	nu	nu	nu	nu	nu	nu	nu
359	nu	na	never used/not available	nu	nu	nu	nu	nu	nu	nu
360	nu	na	never used/not available	nu	nu	nu	nu	nu	nu	nu
361	nu	na	never used/not available	nu	nu	nu	nu	nu	nu	nu
362	L1	FDID	Flexible DID	Y	Y	Y	Y	Y	Y	Y
363	nu	na	never used/not available	nu	nu	nu	nu	nu	nu	nu
364	L1	NMCE	Meridian Communications Exchange Connectivity	Y	Y	Y	Y	Y	Y	Y
365	LS	FIBN	Fiber Network Fabric (Opt 81 & 81C)	na	Y	na	na	na	na	Y
366	L1	PLUGIN	Plug-In	Y	Y	Y	Y	Y	Y	Y
367	L2	BNE	Business Networking Express EuroISDN Call Diversion & Gateways	Y	Y	Y	Y	Y	Y	Y
368	LS	CPP_CNI	Core Processor PII Opt. 81C	na	Y	Y	na	na	na	na

Package Number	Service Level	Package Mnemonic	CVSD Service Level Feature Package Description	CS 1000M Ch/Cab & 11C Ch/Cab	CS 1000M SG/ MG & 61C/81C	CS 1000E	CS 1000S & MG 1000T	MG 1000B	Option 51C	Option 81
369	nu	na	never used/not available	nu	nu	nu	nu	nu	nu	nu
370	L3B	MSMN	MDECT 2000 Multi-Site Mobility Networking	Y	Y	Y	Y	Y	Y	Y
371	r	KAP_ AUT	Kapsh sidestream - Austria	r	r	r	r	r	r	r
372	r	KAP_ CR	Kapsh sidestream - CZ/SK	r	r	r	r	r	r	r
373	r	KAP_ HUNG	Kapsh sidestream - Hungary	r	r	r	r	r	r	r
374	r	KAP_P L	Kapsh sidestream - Poland	r	r	r	r	r	r	r
375	r	KAP_ CIS	Kapsh sidestream - CIS	r	r	r	r	r	r	r
376	r	KAP_ ACD	Kapsh sidestream - ACD	r	r	r	r	r	r	r
377	nu	na	never used/not available	nu	nu	nu	nu	nu	nu	nu
378	nu	na	never used/not available	nu	nu	nu	nu	nu	nu	nu
379	nu	na	never used/not available	nu	nu	nu	nu	nu	nu	nu
380	L1	STS_M SG	M3900 series - Set to Set Messaging	Y	Y	Y	Y	Y	Y	Y
381	L1	CDIR	Corporate Directory	Y	Y	Y	Y	Y	Y	Y
382	L2	V_OFF ICE	M3900 Digital Phones Virtual Office	Y	Y	Y	Y	Y	Y	Y
383	r	R25 Lite	R25 Lite-Restricted & Not used after 25.08	r	r	r	r	r	r	r
384	L1	ATAN	Attendant Announcement	Y	Y	Y	Y	Y	Y	Y
385	L2	NI2 NAME	NI2 Name Display	Y	Y	Y	Y	Y	Y	Y
386	L1	M3900 _ENH	M3900 Productivity Enh.	Y	Y	Y	Y	Y	Y	Y
387	L2	V_OFF ICE_E NH	M3900 Virtual Office Enhancements	Y	Y	Y	Y	Y	Y	Y
388	L3A	ACDE	ACD DN/CDN Expansion	na	Y	Y	na	na	Y	Y
389	L1	PONW	Network Breakin & Force Disconnect	Y	Y	Y	Y	Y	Y	Y
390	BO	SUCC	Succession Branch Office - Only	na	na	na	na	Y	na	na

Package Number	Service Level	Package Mnemonic	CVSD Service Level Feature Package Description	CS 1000M Ch/Cab & 11C Ch/Cab	CS 1000M SG/MG & 61C/81C	CS 1000E	CS 1000S & MG 1000T	MG 1000B	Option 51C	Option 81
		BR OFFICE								
393	L3A	UUI	User to User Information	Y	Y	Y	Y	Y	Y	Y
394	L2	OAS	Observe Agent Security New Rls 3.0	Y	Y	Y	Y	Y	Y	Y
395	OP-L1	M3900 Med	M3900 Mediterranean language supp.	Y	Y	Y	Y	Y	Y	Y
396	OP-L1	M3900 RGA_PROG	Israeli Market	Y	Y	Y	Y	Y	Y	Y
397	L1	M3900 ICON	M3900 Full ICON Support Package	Y	Y	Y	Y	Y	Y	Y
398	L1	PCA	Service Blending with external call servers	Y	Y	Y	Y	Y	Y	Y
399	L2	H323 VTRK	IP PEER H323 Trunks New Rls 3.0	Y	Y	Y	Y	Y	Y	Y
400	L1	LOCX	ESN Location Code Expansion	Y	Y	Y	Y	Y	Y	Y
401	L2	PVQM	Proactive Voice Quality Management	Y	Y	Y	Y	Y	Y	Y
402	L2	SOFTS WITC H	Soft Switch	na	na	Y	na	na	na	na
403	L2	IPMG	IP Peer Media Gateway	na	na	Y	na	na	na	na

Package Number	Service Level	Package Mnemonic	CVSD Service Level Feature Package Description	CS 1000M Cb/Cab & 11C Cb/Cab	CS 1000M SG/ MG & 61C/81C	CS 1000E	CS 1000S & MG 1000T	MG 1000B	Option 51C	Option 81
404	L2	GRPRI M	Geo Redundancy Primary Call Server	na	*CP P base d Opti on 61C , 81C , CS1 000 M SG, MG	Y	na	na	na	na
405	OP- L2	GRSEC	Geo Redundancy Secondary Call Server	na	na	na	na	na	na	na
406	L2	SIP	SIP Package	Y	Y	Y	Y	Y	Y	Y
407	L2	GCAC	Adaptive Network Bandwidth Management	Y	Y	Y	Y	na	Y	Y
511	nu	na	never used/not available	nu	nu	nu	nu	nu	nu	nu

Appendix J - GNU LESSER GENERAL PUBLIC LICENSE

Communication Server 1000 Release 4.5 software contains code used under the terms of the GNU Lesser General Public License. The Terms and Conditions of this license have been included below.

TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables. The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".) "Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.

b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.

c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.

d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy. This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library. If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

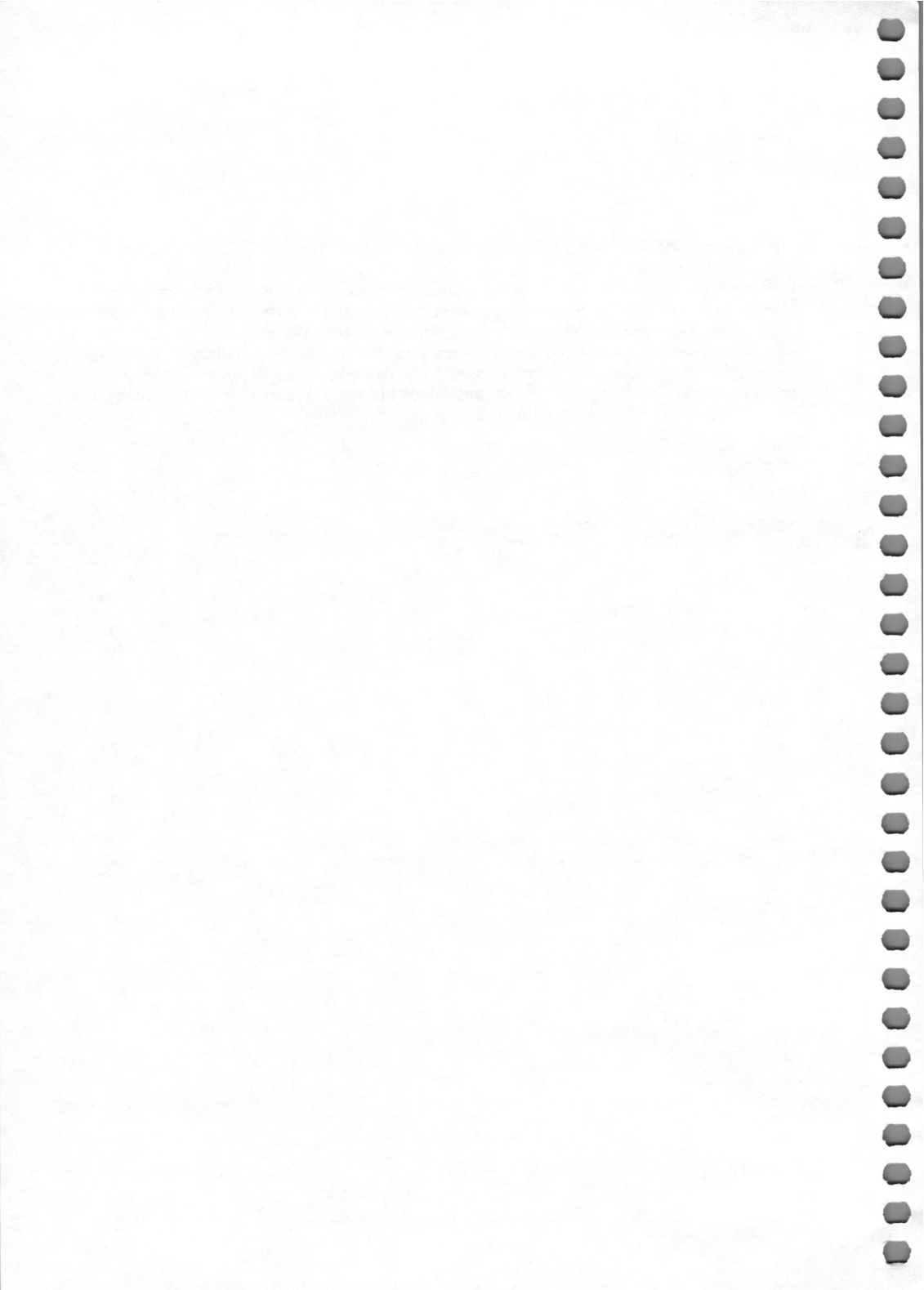
NO WARRANTY

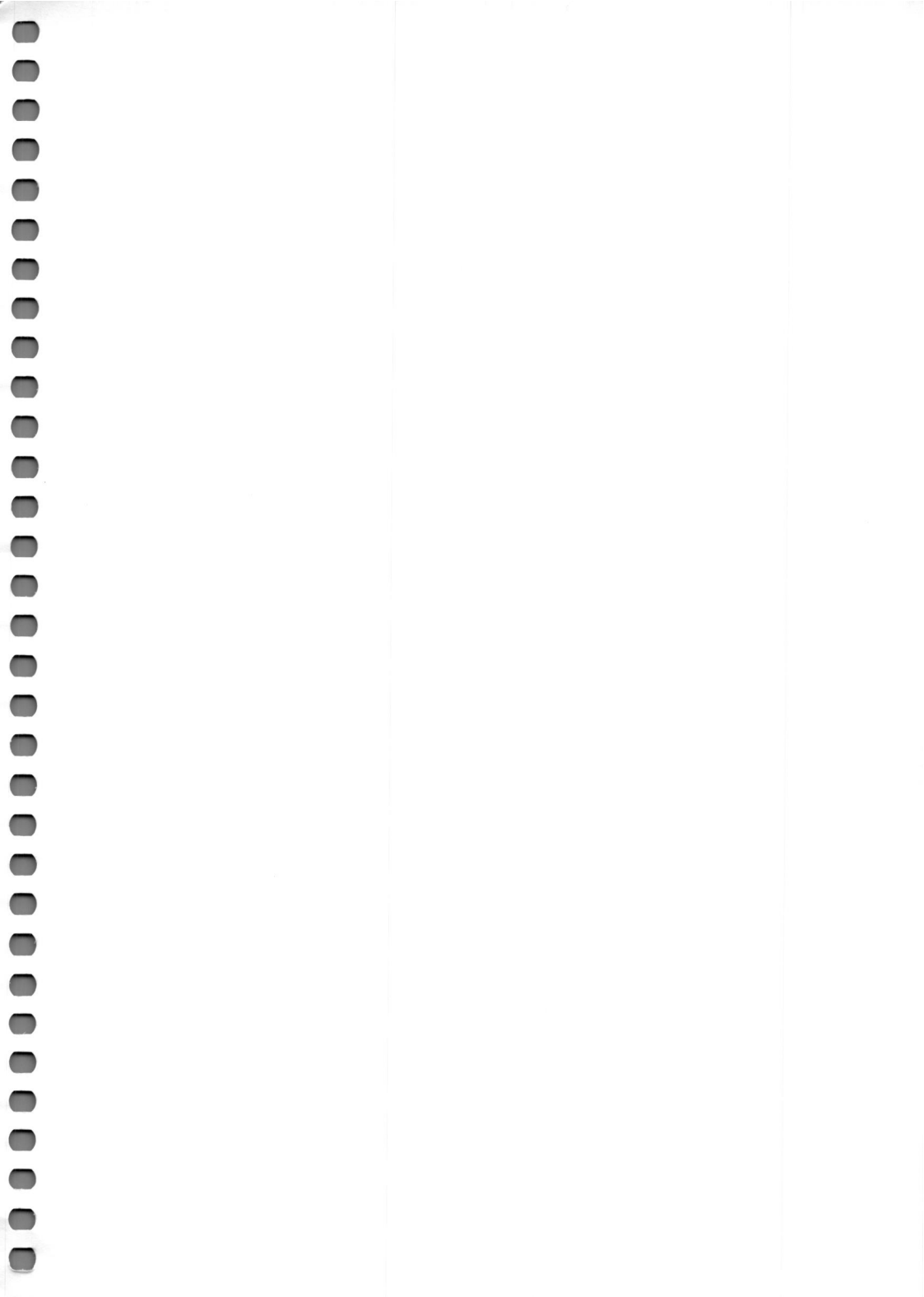
15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

*Nortel, the Nortel logo and the Globemark are trademarks of Nortel.

Nortel is a recognized leader in delivering communications capabilities that enhance the human experience, ignite and power global commerce, and secure and protect the world's most critical information. Serving both service provider and enterprise customers, Nortel delivers innovative technology solutions encompassing end-to-end broadband, Voice over IP, multimedia services and applications, and wireless broadband designed to help people solve the world's greatest challenges. Nortel does business in more than 150 countries. For more information, visit Nortel on the Web at www.nortel.com.







N 0 0 2 8 4 3 3

Nortel Communication Server 1000

Release 4.5 Product Bulletin

Copyright © Nortel Networks Limited 2005

All Rights Reserved

Information is subject to change without notice. Nortel Networks reserves the right to make changes in design or components as progress in engineering and manufacturing may warrant.

Nortel, Nortel (Logo), the Globemark, This is the Way, This is Nortel (Design mark), SL-1, Meridian 1, and Succession are trademarks of Nortel Networks.

Publication Number: N0028433

Document Release: Standard 1.00

Date: September 2005

Produced in Canada



>THIS IS THE WAY

>THIS IS **NORTEL**

Internet address
<http://www.nortel.com>